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Newsprint Rehabilitation Progresses Markedly

Capital Reorganization of Lake St. John Power & Paper Co. Planned — Consolidated Paper Corp. Proposes to Pay Interest on Funded Debt for Next Three Years—Lifting of Price Bros. Receivership Appears Nearer.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., November 2, 1936—Both financially and physically marked progress continues toward rehabilitation of the newsprint industry. The past week brought two constructive developments—announcement of a plan of capital reorganization for Lake St. John Power and Paper Company, and a scheme of arrangement which will enable Consolidated Paper Corporation to pay interest on its funded debt for the next three years, and possibly five years, in stock rather than in cash. These two developments will leave Price Bros. and Co. and Abitibi Power and Paper Company, both in bankruptcy, as the only two sore spots in the newsprint field.

The lifting of the Price Bros. receivership appears closer at this time than for some years. Plans have been formulated, it is understood from good sources, for the redemption of the presently outstanding bonds—almost entirely held by Pacona Ltd., a subsidiary of Aluminum Company—Saguenay Power interests— and a subsequent reorganization of the capital structure and rehabilitation of the financial condition of the company. London financial interests that have been interested right along in the Price Bros. situation, have representatives on the way out to Canada at the moment and it is believed in financial circles that this presages early action on the submission of the new plan.

As regards the Abitibi Company, the bondholders have been working on a reorganization plan for some time, and developments are daily expected. Indications are, therefore, that by the Spring, at the latest, receivership and defaults in the newsprint field will be things of the past.

Meanwhile, production of newsprint by Canadian mills continues to establish new peaks, and at the present time newsprint mills are operating at an average of over 80 per cent of rated capacity, as compared with 72 per cent for the industry in 1935 and below 50 per cent in 1932. If current production is applied against efficient capacity in the industry the average is probably nearer 90 per cent at the moment.

Mounting Value of Newsprint Exports

Figures first released by the Dominion Bureau of Statistics show remarkable increases in the value of newsprint exports. For September the exports amounted to 5,567,360 cwts., valued at $9,755,549, as against 4,178,239 cwts., valued at $7,173,542 in September, 1935. For the six months of the fiscal year to September exports of newsprint had a value of $52,069,099, as compared with $43,484,631 in the similar period of last year. Of the September exports the share taken by the United States was valued at $7,764,683. The next largest customers were Australia with $471,409, New Zealand with $273,057, Argentina with $202,351, Japan with $114,177, and Mexico with $176,255. Altogether newsprint exports went to 34 countries.

There was also a marked increase in exports of wood pulp and screenings, the total exports of which were 1,423,556 cwts., valued at $2,906,804, as compared with 1,112,670 cwts., valued at $2,221,163 in September, 1935. Of this 2,594,867 was credited to the United States.

Port Royal Company's Developments

The Port Royal Pulp and Paper Company, of Saint John, N. B., has just made an issue of $350,000 of 5 per cent first (closed) mortgage serial bonds to finance extensions to the plant. The property was formerly owned by the Nashwaak Pulp and Paper Company. The company at present has a capacity of 80 tons of bleached sulphite plup per 24 hours, and the plant is now being expanded to a capacity of 110 tons per 24 hours of rayon pulp.

In this connection, it is pointed out that some twenty companies in the world are able to produce the quality necessary for the manufacture of rayon, only two of which are in Canada—International Pulp and Paper Company and the Restigouche company, subsidiary of Fraser Companies, Ltd.

To Re-open Pulp Mill in Gaspe

Steps of an unusual nature to remedy conditions in Gaspe are provided in a bill before the Quebec legislature with the object of reopening the pulp mill at Chandler, which has been closed for some time. Under the bill the Lieutenant-Governor-in-Council may authorize any person, firm or corporation, who or which, in his opinion affords sufficient guarantees of solvency, to acquire by expropriation, the immovables and all the immovable rights affecting the same, on which the mill for the production of

(Continued on page 20)

Kimberly-Clark Declares Special Dividend

Holders of Common Stock of Record December 3 to Receive Extra of 25 Cents—Earnings for Third Quarter Amounted to $167,370—Masonite Also Declares Extra of 25 Cents to Stockholders of Record December 1.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 2, 1936—Holders of common stock of the Kimberly-Clark Corporation, Neenah, Wis., will receive a special dividend of 25 cents a share payable December 23 to stockholders as of record December 3, according to action taken by the board of directors.

Earnings for the third quarter of this year amounted to $167,370 after federal taxes, including tax on undistributed profits, and after deducting loss of $23,347 by the William Bonifas Lumber Company, a wholly owned subsidiary.

After dividend requirements on preferred stock, the net income is equal to 34 cents each on 487,173 shares of common stock. In the second quarter of this year, the net income was $355,256, or 42 cents a common share.

An extra dividend of 25 cents per share on the new common stock was voted by the Masonite Corporation at its annual meeting of stockholders last week at Wausau, Wis. This will be in addition to the regular dividend of 25 cents. Both will be payable December 15 to stockholders of record December 1.

Common stock of the company recently was split two for one, so the dividend declared is equivalent to one dollar per share on the old common stock outstanding prior to October 1. Holders of new 5 per cent cumulative preferred, series A, will receive a two months' dividend payable December 1 to stockholders of record November 20.

In his report, A. P. Woodson, secretary, declared there is a bright outlook for Masonite products, due to the building boom all over the nation. Wall board and insulating board are especially in demand, and automobile manufacturers also have become big users of the company's products. One of its sizable orders during the last year was for Masonite tile, used in all bathrooms on the liner Queen Mary.

All of the directors were re-elected, and the board retained the same officers as follows: President, Ben Alexander, Chicago; vice-presidents, D. C. Everest, Wausau, Wis., R. G. Wallace, Chicago, and W. H. Mason and J. H. Thickens, Laurel, Miss.; secretary, A. P. Woodson; treasurer, M. P. McCullough, Wausau. Other members of the board are: C. J. Winton, Jr., Minneapolis; Ernst Mahler, Neenah, Wis.; C. H. Worcester, Chicago, and C. C. Yawkey, Wausau.

News of the Industry

J. J. Plank & Co., Appleton, Wis., is building a new warehouse 26 by 80 feet to its plant, and will have the work completed by December 1. It is being built of concrete blocks, and Julius Krause is the contractor. A new type of dandy roll has been placed in manufacture, according to J. J. Plank, president, and additional machinery has been installed. The addition therefore was necessary to provide additional manufacturing space.

Ownership of the reservoir now under construction on the Big Eau Pleine River, in Marathon County, Wis., will be transferred January 1 from the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., to the Wisconsin Valley Improvement Company. The Consolidated financed the project and supervised its construction. A meeting of the Improvement Company was held last week at which details relative to a $350,000 bond issue were given attention. The issue was authorized to finance completion of the reservoir. These bonds represent one-half of the construction cost, and have been sold to a Milwaukee firm. The remaining $350,000 is represented by stock in the Improvement Company. Pouring of concrete at the Big Eau Pleine dam has been completed. The rollaway of the dam will be completed next, and the steel gates will be installed. Rip-rapping also will be done at once. W. E. Brooks, manager of the Improvement Company, estimates that construction will be completed by November 15.

Figures released by the Census Bureau at Washington, D. C., show that 123 paper mills and kindred establishments in Wisconsin have shown marked increases in employment and production in 1935 as compared to 1933. With three less mills reporting, the number of wage earners increased 1,041. Wages were increased by $3,004,575. The value of products showed an increase of $123,128,079. September of this year showed a marked improvement over the month of August. Using the 1923-26 period as an index of 100, September employment in the paper and printing industries in Wisconsin stood at 101.8 as compared to 89.6 for August, and 97.3 for September of 1935. Payrolls for a comparative week in September were 93.1 and 90.6 in August, and in September of 1935 were 86.2.

Thomas M. Barrows, president-elect of Lawrence College, will assume the directorship of the Institute of Paper Chemistry, Appleton, Wis., on February 1. He succeeds Dr. Henry Merritt Wriston, who leaves Lawrence College and the Institute to take the presidency of Brown University, Providence, R. I. The president of the college automatically becomes director of the Institute. At a recent meeting of the board of trustees of the Institute, Westbrook Steele was elected executive director, and the post he formerly held as executive secretary was vacated. John Strange was elected secretary.

One-hundred and thirty-five officers and employees and their wives, of Appleton Wire Works, Appleton, Wis., held a banquet at Conway Hotel Tuesday evening, October 27, to celebrate the fortieth anniversary of the company's founding. G. E. Buchanan, secretary-treasurer, reviewed the history from the opening of a small two-story building on the present site in 1896 with four looms. Twelve additions have been made so the plant now covers an entire block and seventy looms are being operated. Interesting incidents also were recalled by A. B. Weissenborn, president, and Alvah Taylor, the oldest employee. William E. Buchanan, vice-president and sales manager, announced that 59 employees have been on the payroll for more than fifteen years, and thirty for more than 25 years. He also told of two patents which have been developed to the commercial stage. One of these, the seamless welding of paper mill wires, is responsible for capacity operation at the present time, he said.

Two of the interesting exhibits at the Wisconsin Products Exposition last week at the civic auditorium at Milwaukee, Wis., were those of paper manufacturers of that

city. One was from the Hummel & Downing Company, which showed the entire process of paper making from wood pulp to finished product. The display also showed the importance of pulp reclamation, especially the process of utilizing waste paper for new products. The other was the exhibit of the Milwaukee Lace Paper Company, showing its wide variety of products, including card table covers, doilies, drinking cups, bottle caps, and cups for candy, desserts and nuts. The concern was founded forty years ago by its president, C. W. Hamilton, and John Hess, and has developed from small beginnings to a national industry occupying a large factory.

Representatives from 32 states attended a meeting of the National Association of State Foresters at Madison last week, and adopted resolutions urging that the CCC camps and program be continued, and made a permanent organization, since it is through these that the reforestation work has gone forward at a rapid pace. R. B. Goodman of Marinette, Wis., chairman of the Wisconsin Conservation Commission, addressed the convention. He voiced a warning that only intelligent management henceforth can prevent the removal of the paper-making industry from northern to southern states. He said announcement was made recently at a forestry meeting in Atlanta, Ga. that pulp-wood users were having difficulty in obtaining material from the north. The group made a tour of forestry operation centers in Wisconsin, including the plantations of the Nekoosa-Edwards Paper Company.

Lower freight rates on wood pulp from Appleton, Wis., to Kalamazoo and Hartford City, Mich., probably will result from the report submitted to the Interstate Commerce Commission by A. G. Hagerty, examiner, who conducted hearings recently on complants filed by Appleton mills. His report cites the rates as unreasonable, and prescribes award of reparation and reasonable rates. The applicants charged that group-commodity rates of 25 and 27.5 cents per 100 pounds were in excess of the class-rates contemporaneously maintained. The traffic represents more than 100 cars a year, carrying approximately 70,000 pounds of wood pulp from Appleton mills.

Rainier Pulp Co. To Expand

SHELTON, Washington, October 31, 1936—Plans have been completed for and work started on an enlargement at the Rainer Pulp and Paper company's plant here under which the production of "rayonier" pulp will be stepped up.

Piling has been driven for an extension of the pulp storage warehouse extending into the bay, and a pile driver is now at work driving sticks for a concrete warehouse in front of the office building. This latter structure will be 50 by 150 feet and in it will be installed machinery for increasing production.

Work will be rushd to completion. When the new units are finished about 50 more men will be steadily employed at the big mill.

Variable Speed Drives for Pumps

For maximum efficiency, the delivery of a centrifugal pump should be controlled by varying the speed. This is especially true when pumping directly into the distributing piping. The comparative economies of constant speed and variable speed drives for pumps and the several methods of obtaining variable speed are discussed by A. Peterson, chief engineer of the Centrifugal Pump Department of the De Laval Steam Turbine Company, Trenton, N. J., in a paper which has been reprinted from the *Journal of the American Water Works Association* and which will be sent gratis to those interested.

Government's Paper Bids and Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 4, 1936.—The Government Printing Office has announced the following paper awards:

The Mathers-Lamm Paper Company will furnish 10,000 sheets of 22 x 28 gray photo mount board at $36.59 per M sheets, bids for which were received on October 7.

Barton, Duer & Koch Paper Company will furnish 8,400 pounds of 50 per cent rag, 280 lbs. white index paper, single ply at 12.6 cents per pound and the same firm will furnish 7,240 pounds of same, 362 lbs., at 13.58 cents, bids for which were received on October 2.

The Edgewater Paper Company will furnish 134,500 pounds (500,000 sheets) of 38 x 48 single coated book paper at 6.25 cents per pound and the Whitaker Paper Company will furnish 2,000 sheets of 24 x 36 brown cloth lined paper at $132.20 per M sheets. Bids for both of these items were received on September 30.

The R. P. Andrews Paper Company will furnish 13,000 pounds of various sizes hard rolled binders board at 4.6 cents per pound and the Cauthorne Paper Company will furnish 500 pounds of red stereotype molding paper at 15 cents per pound. The Royal Card and Paper Company will furnish 36,000 pounds of 41 x 52 single coated book paper at 6.25 cents per pound. Bids for all of these items were received on September 28.

The R. P. Andrews Paper Company will furnish 48,000 sheets of 20 x 24 buff gummed paper at $8.99 per M sheets, bids for which were received on September 21.

The Government Printing Office has received the following bids, all at 5.67 cents per pound for 94,150 pounds (350,000 sheets) of 38 x 48 halftone book paper; Whitaker Paper Company, John F. Post, Inc., Stanford Paper Company, R. P. Andrews Paper Company, Barton, Duer & Koch Paper Company; Reese & Reese, Inc., J. W. Butler Paper Company and Paper Corporation of the United States. The Mathers-Lamm Paper Company bid 5.63 cents per pound.

For 36,000 pounds of supercalendered book paper in 38 inch rolls; Barton, Duer & Koch Paper Company, 4.85 cents per pound; Reese & Reese, Inc., 5.09 cents; Cauthorne Paper Company, 5.09 cents; John F. Post, Inc., 4.85 cents; Whitaker Paper Company, 5.09 cents; Stanford Paper Company, 4.85 cents; Virginia Paper Company, 5.09 cents; R. P. Andrews Paper Company, 5.09 cents; Dobler & Mudge, 5.09 cents; Mathers-Lamm Paper Company, 4.823 cents; and Paper Corporation of the United States, 5.08 cents.

For 10,000 pounds of No. 2 kraft wrapping paper; Whitaker Paper Company, 3.79 cents; Mathers-Lamm Paper Company, 4.5 cents; Cauthorne Paper Company, 3.79 cents; and J. R. Howarth Paper Company, 3.875 cents and 4.125 cents.

New Prices for Titanox Pigments

Titanium Pigment Company, Inc., of New York, has announced a schedule of new prices on titanox pigments, effective November 2, 1936, as follows:

Titanox-A (Titanium Dioxide), in bags, 16 cents; in barrels, 16¼ cents per pound.

Titanox-B (Titanium Barium Pigment), in bags, 5¾ cents; in barrels, 6 cents per pound.

Titanox-C (Titanium Calcium Pigment), in bags 5¾ cents; in barrels, 6 cents per pound.

Titanox-L (Lead Titanate), in barrels, 10 cents per pound.

All quotations are in carload lots, at works.

Container Declares 75 Cents Extra Dividend

Regularly Quarterly Dividend of 25 Cents Also Declared—Company Votes Christmas Bonus of One Week's Pay for Factory and Clerical Workers—Heavy Request Experienced for All Standard Grades of Paper in Chicago.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., November 2, 1936—An extra dividend of 75 cents and the regular quarterly dividend of 25 cents has been declared on the stock of the Container Corporation of America. The company also voted one week's pay to factory and clerical workers who have been employed since June 1, to be paid at Christmas.

Demand for Paper Active

The Chicago paper market is at least on a par with other industries from the standpoint of business conditions and potential improvement following the "unsettled" season. All divisions report a condition of good business, with demand in some cases being far ahead of the ability of local merchants to fill. Paper bags and other kraft commodities are reported in this category with the entire kraft line continuing exceptionally strong.

Fine papers in general continued in good demand with bonds, in particular, showing a strong undertone. Sulphites continued to evidence a particularly gratifying market position. Books and covers were about as last week with the former showing improvement as Fall business develops. The board market was consistently broadened out. Groundwoods were firm and in good demand, with reports of capacity production at the mills coming from several sides. Newsprint was also reported as in satisfactory shape.

Waste papers also featured the week, with folded news and mixed papers leading the vanguard in this overdue improvement.

News of the Industry

Bradner Smith & Co., Chicago jobbers, have recently announced that the Waring-Central Company has been formed in New York City to serve as a manufacturing subsidiary of the local concern. The New York subsidiary produces high grade announcement envelopes, occupying approximately 25,000 square feet of floor space at 324 East 19th street. M. H. Lund will serve as president of the concern. He became identified with Bradner Smith & Co. in 1906 and later was sales manager of the Crystal Tissue Company and for five years a special representative of the U. S. Department of Commerce Paper and Pulp Commission in Europe. Recently Mr. Lund has been secretary of the Association of Manufacturers and Converters of Tissue.

The Chicago paper industry again finds itself in the midst of an important community chest drive with John D. Swigart again assuming the responsibility for the paper contributions. Mr. Swigart has in turn subdivided activities in order that each branch of the industry may have ample opportunity to contribute its share to the $3,400,000 fund. The campaign calls for assistance from business concerns as well as their employees and the funds are to be apportioned among the Chicago charities not now assisted by public grants. Included among those sub-chairmen who will work with Mr. Swigart are the following: Envelope Manufacturers, F. W. Randolph, Hecon Envelope Company; Waste Paper Dealers, A. F. Meinsterheim; Fine Papers, P. A. Van Vlack, Moser Paper Company; Mill Representatives, James Knox; Wrapping Paper, James S. Danehy, Schwarz Paper Company; School Supplies, A. W. Miller; Set-Up Boxes, R. W. Darnell and Folding Boxes, A. G. Ballenberg, Morris Paper Mills.

Chicago paper houses are preparing for the bowling season with twelve teams representing nine firms lined up for the Paper Merchants Bowling League. Whitaker Paper Company, Bradner Smith & Co., J. W. Butler Paper Company, Chicago Paper Company, Bermingham & Prosser, Blunden-Lyon Company, Messinger Paper Company, Parker Thomas & Tucker and Moser Paper Company have entered teams. W. H. Ehrlicher of Bermingham & Prosser, is the president of the league while G. C. Olson, Chicago Paper Company, inherits the tough job of secretary.

The Midwest Division of the Salesmen's Association of the Paper Industry got around to honoring Burt Fisher this week for the excellent job he did as chairman of the golf committee of the Association. The Monday, October 26, luncheon at the Hotel Sherman was given over to a eulogy of Burt and his prowess in obtaining the best aggregate attendance for the five monthly golf outings that the association has yet experienced. Jack Burns, vice-president of the division, presided at the meeting and presented Mr. Fisher with a set of matched woods as a token of the appreciation of all members. Al Pfister, piano playing impresario from Bradner Smith & Co. provided the musical entertainment. Inasmuch as Mr. Pfister has been doing a good job of providing the music at the monthly outings, the entire atmosphere was of the golf and outing variety.

Local trade is looking forward to immediate publication of a rate of 23½ cents on wood pulp originating in Europe and Africa and moving from New Orleans or Gulfport to points in Indiana. The rate is based on a carload minimum of 80,000 pounds and is to be announced by the southern ports foreign freight committee which is reported to have approved the rate.

The Chicago headquarters of the National Paperboard Association have announced the annual meeting of the Association to be held at the Waldorf-Astoria Hotel, New York City, on Thursday, November 19. The meeting is called for election of officers for the ensuing year and for taking such other action as is specified in the By-Laws. An interesting program is being arranged which will include a report by President Sidney Frohman covering association activities of the past year. The program of Association activities for 1936-37 will also be reviewed and the headquarters office is making a special effort to insure a large and representative attendance.

Marvellum Reduces Prices

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., Nov. 2, 1936.—The Marvellum Company has reduced prices on their Rayon Mica Coated embossed cover lines. A new price list gives prices for various quantities basis 20x26 in the 26 inch width roll. It also gives prices for these papers sheeted 20x26 which really is size 20x26½ because it is sheeted from the jumbo mill roll. This price list applies on all their rayon lines of box cover papers.

Outlook for Abitibi Power & Paper Improves

Better Results Anticipated This Year Compared to Preceding Twelve Months—Increased Production and Slight Advance In Newsprint Quotations Account for Betterment—Thunder Bay Mill Running at Capacity.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., November 2, 1936—It is reported that the Abitibi Power and Paper Company, Limited, whose head office is in Toronto, will show substantially better results in 1936 than last year. Increasing volume of production and slight advances in the price of newsprint account for a large part of the improvement. Power costs of the Thunder Bay Paper Company, Port Arthur, which is a subsidiary of the Abitibi Company, have been reduced from $21 to $19 per horse power by the Hydro-Electric Commission of Ontario. If the mill can continue operating at capacity this would mean a saving of about $50,000 annually. The second machine in this plant was put in operation during the past month so that the mill is now running to capacity. Net earnings available for depreciation and bond interest were $1,200,000 in 1935 compared with $952,000 in 1934. Without taking depreciation into consideration this was equivalent to earning nearly 2.5 per cent on the $48,300,000 of outstanding 5 per cent bonds which are in default. However, the company formerly charged about $1,700,000 annually as depreciation and depletion so that last year's earnings were not sufficient to cover these charges.

Waterways To Be Surveyed

The Hon. Mitchell Hepburn, Premier of Ontario, has ordered a complete survey of Northern Ontario waterways to discover how they may be improved to make mature and inaccessible timber stands available for pulpwood operators. The Ontario government expects that approximately 600,000 cords of pulpwood will be cut this season, yielding the provincial treasury some $900,000 in stumpage dues. The new policy of the provincial administration is to insure continuous cutting in huge areas where timber has gone beyond maturity. Mr. Hepburn believes that ten thousand men will find employment in the bush this winter as a result of raising the embargo on export of pulpwood.

Some criticism has been aroused against this attitude of the Government in that it is alleged . . . it is a violation of the long prevailing principle that newsprint produced from wood cut from the forests of Ontario must be manufactured in the province. The *Sault Ste Marie Star,* while believing that the lifting of the export ban might be helpful as a temporary measure, is also fearful of the possible consequences. It says that everybody will sympathize with the government in its task to provide work but after all Ontario must look after its own industries first and a quick end to the export of wood is devoutly to be hoped for. There is danger that huge reserves of pulpwood will be piled up by newsprint mills across the border while the embargo is off and that the mills in Northern Ontario will be injuriously affected for a long time to come as a result.

News of the Industry

By the recent reduction in power rates the Great Lakes Paper Company, Limited, Fort William, Ont., will save about 63 cents a ton on the cost of producing newsprint. The decrease is from $21 to $18 per horse power which is $1. more per horse power than for other companies in the area because the Great Lakes company accepts delivery at 110,000 volts and operates its own transformers. The production of the concern will be approximately 100,000 tons of newsprint this year, the full rated capacity of the mill. Thus the saving is around $63,000 annually. The importance of this is apparent when compared with fixed charges on the new five per cent bond issue of $300,000 annually. The management express confidence in the outlook. Costs have been greatly reduced, production is at capacity and when the reallocation of timber limits is settled with the Ontario government, the company will make substantial outlays on permanent improvements which will reduce costs still further. The improved outlook has been reflected in a rise of the new class "A" preferred shares from about $8 to $18 in the past two months. Dividends are not possible until earned and until newsprint reaches $45.30 per ton. Despite the large outlay for reorganization expenses and deferment of bond interest the new five per cent issue is quoted around 80.

C. H. Carlisle, President of the Great Lakes Paper Company, Ltd. has replied to a communication of R. B. Pow, Mayor of Fort William, Ont., concerning pulpwood supply contracts awarded by the company in which he says that the directors have arranged so that the company has adequate capital to carry on its business. As soon as the organization can get its timber limits it hopes to erect a large storage building at the plant and make considerable improvements on the limits. "If we are to do the most for the mill and the most for the people of Fort William it means that they must lend their co-operation in everything that is constructive. We have requested Harry Murphy to join our board and consider him an excellent business man," concludes Mr. Carlisle.

One of the ten camps operated by the Spruce Power and Paper Company Limited, Kapuskasing, Ont., and located thirty-eight miles south of that place at Redpine Lake, was destroyed by fire on October 30. The lives of 125 loggers were imperiled and two were suffocated by the flames.

The Connolly Paper Box Company, 310 Spadina Avenue, Toronto, will in a few weeks remove to larger quarters in the Ritchie Building, 860 Richmond Street West, where they will have about 5,000 square feet of floor space.

George Colville Pauline of the sales staff of the Alliance Paper Mills, Toronto, was recently wedded to Miss Elizabeth Kelley, of St. Catharines. He is a son of George W. Pauline, of Toronto, vice-president and managing director of the Alliance Paper Mills.

The trade of British Columbia with Germany is not large, but provincial experts express the belief that, under the new Canadian German trade agreement, business will be considerably increased. Latest figures compiled by the research bureau show that the province of British Columbia exported to Germany during the year 1934 logs to the value of $56,903.00 and pulp to the value of $5,794.00.

Edward Sundstrom, of the Great Lakes Pulp and Paper Company, Port Arthur, Ont., who had been in the service of the organization since the mill was erected in 1929, passed away lately after a long illness. He was 51 years of age and, is survived by his widow and two daughters.

Study Course for Paper Salesmen Formulated

Paper Trade Association of Philadelphia Sponsors Special Instruction With Object of Increasing Salesmen's Efficiency—Nineteen Lectures by Prominent Leaders In the Industry Are Listed Under the Schedule of Classes.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., November 2, 1936—Supplementing the imposing roster of achievements by the Paper Trade Association of Philadelphia, under the direction of Mrs. Doris E. Lewis, executive secretary, are the following who comprise the Educational Committee: Ormond Freile, vice-president, Paper Merchants, Inc., Joseph H. Miller, vice-president, Garrett-Buchanan Company; William A. Hentz, sales manager, Thomas W. Price Company; together with William A. Meeks, manager, Typothetae of Philadelphia, Inc., Stanley Best, president, National Typesetting Corporation, and H. T. Sorenson, general manager, Beck Engraving Company, who comprise the Associated Trades Committee, there has just been completed the preliminary work of formulating a course of study for paper salesmen. The idea is to give paper salesmen a general conception of the mechanical and theoretical angles of printing with the hope that it will tend towards more efficient service on the part of paper salesmen.

Class Limited To Fifty

In order to insure high-grade instruction, the class will be limited to probably fifty. Enrollment will be entered in the order received, subject to the Pennsylvania State College on a *pro rata* basis, so as to insure an even distribution of the student body among member houses. Tuition must be paid by the member house to insure steady attendance. Certificates will be issued to students by the Pennsylvania State College when the course is satisfactorily completed.

Under the Schedule of Classes there are listed nineteen lectures, as follows:

No. 1—"Getting the Customer's Point of View," by O. Freile, vice-president, Paper Merchants, Inc., and vice-president, Paper Trade Association of Philadelphia. "Why This Kind of Education?" by Dr. A. H. Melville, merchandising counsellor-industrial education specialist, State College, Pa.

No. 2—"History of Printing," by C. S. Ruddle, sales manager, Cuneo Eastern Press, Philadelphia, Pa.

No. 3—"The Mechanics of Job Printing," by Fritz Peters, secretary, Ruttle, Shaw & Wetherill, Inc., formerly lecturer on the Graphic Arts, New York University, N. Y.

No. 3—"The Mechanics of Job Printing," continued—by Summerfield Eney, printing expert, Champion Paper and Fibre Company, Hamilton, Ohio.

No. 4—"Printing Ink," by John H. King, manager, International Printing Ink Company, Chicago, Philadelphia, New York and associates.

No. 5—"Class Visit at Printing Plant" to Cuneo Eastern Press, Philadelphia, where through the courtesy of L. C. Werden, general manager, Cuneo Eastern Press, there will be opportunity to see the Gutenberg press exhibit, modern job printing plant, actual operation of machines, etc., and illustrations of the relation of the right paper to the process used and the character of the job will be afforded those who participate in this trip.

No. 6—"The Art of Reproduction," by H. T. Sorensen, Beck Engraving Company, Philadelphia and New York.

No. 7—"Class Inspection Trip"—to Beck Engraving Company, Philadelphia, one of the country's outstanding photo-engraving organizations.

No. 8—"The Publication Printer," by C. S. Fleck, of V. P. Mack Printing Company, Easton, Pa.

No. 9—"Class Trip"—to Chilton Publications, through the courtesy of The Chilton Company, Philadelphia.

No. 10—"Lithography,"—by George L. McGinley, Ketterlinus Manufacturing Company and Associates.

No. 11—"Class Trip" to Lithographic Plant, through the courtesy of Ketterlinus Manufacturing Co.

No. 12—"Specialized Process," by Raymond Blattenberger, general manager of Edward Stern & Co., and E. E. Goeckler, of the same firm.

No. 13—"Class Trip"—to Edward Stern & Co., through the courtesy of this firm.

No. 14—"Binding-Ruling"—by A. J. Abraham of Hartman Company.

No. 15—"Class Trip"—to Bindery Plant, through the courtesy of the Philadelphia Bindery, Inc., L. D. Weisgerber.

No. 16—"Mechanics of Printing Newspapers and Rotogravure"—by H. C. Turner and members of The Philadelphia Inquirer staff.

No. 17—"Class Visit" to the newspaper plant through the courtesy of the *Philadelphia Inquirer.*

No. 18—"Office Duplicating Processes"—speakers will be announced later.

No. 19—"Graduation"—Address by Class President—"What I got out of this course," followed by very interesting addresses by the president of the Paper Trade Association of Philadelphia; Alfred A. J. Clark, president, Philadelphia Typothetae and William A. Meeks, secretary Philadelphia Typothetae.

Spirit of Program

Particular attention is directed to the names of the men (all leaders in their respective phases of the industry) who have accepted the invitation to co-operate in this work. It is also pointed out that the spirit of this program is not to try to tell anyone how to be a salesman, but rather to work with them by placing in their hands a step-by-step series of lectures and visits to plants designed to familiarize them with the printing business.

Classes are open only to salesmen or members of the staff employed by members in good standing of the Paper Trade Association of Philadelphia, and will be held every Thursday evening, through the courtesy of the Chamber Commerce, at the Chamber of Commerce Building 12th and Walnut streets, Philadelphia beginning Thursday, November 12, 1936, from 7 to 9 P. M. Tuition is $10.00 per student for complete course of lectures.

Champion Paper Distributors

Paper Merchants, Inc., 140 North 6th street, distributors of Champion Papers, announce their appointment as agents for Champion Inventory Index Bristol, suitable for a great variety of daily index uses, such as registration cards, post cards, factory records and general routine business. They are surface sized for excellent writing surface and are made in white and six colors: Buff, Blue, Canary, Salmon, Green and Cherry.

Demand for Paper Well Sustained In Boston

Various Grades of Fine Paper In Good Request—Sentiment In Wrapping Paper Market Optimistic—Box Board Section Less Active—Paper Stock Firmer, With Offerings Limited—Trading In Foreign Rags Lively.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 2, 1936—Wholesale paper dealers generally made favorable statements in regard to the volume of business last week. It is reported that the price of rag papers is tending to advance and that of sulphite papers to decline and it is said that conferences have been held in regard to the situation. The demand for bonds, ledgers and papers for printing purposes was fair to very good, improving in some instances.

Interest in papers for use in making diplomas continued active. The demand for diploma covers is rather unusual for so early in the season. The use of the cover for diplomas is increasing. In many sections of the country, especially towards the South, schools have been slow in adopting the cover form, giving out the diploma in the old way, rolled and tied with a ribbon, but they are gradually adopting the up-to-date method, using the smaller diploma in a neat leather or imitation leather cover, gold-stamped with the name of the school.

Box coverings were in very good demand, as well as specialty lines. Activity prevailed in the wrapping paper market, with a very good feeling in the trade. Favorable reports were made in regard to the demand for paper bags.

The box board business is less active than it was. Paper box manufacturers previously bought supplies in substantial quantities to get under the wire before prices advanced. It is understood that box board mills are now catching up with their orders. There was a good demand for specialty lines.

Paper stock, as a whole, continued firm, with the supply not any too plentiful. In old papers, old newspapers with an unusual demand, advanced to .47½ @ .50 from .45 @ .47½ f. o. b. Boston. There has been some demand for manila envelope cuttings of extra quality, quoted at 1.75 @ 1.85 f. o. b. Boston. Bagging remained steady. Australian wool pouches rose to 2.50 @ 2.60 from 2.35 @ 2.50 f. o. b. Boston. There has been some demand for jute carpet threads from Canadian buyers, but this commodity is scarce in this market. New domestic rags moved very well. Old domestic rags continued active. In roofing stock, two grades listed made further advances, No. 1 going up to 1.75@1.80 from 1.60@1.70 and No. 2 to 1.65@1.70 from 1.45 @ 1.55, both f. o. b. Boston. The quotation on the No. 3 grade, however, was changed to 1.30 @ 1.35 from 1.35 @ 1.45 f. do. b. Boston. There was a firm demand for foreign rags. Large quantities have been sold in the last 60 days. Old fustians advanced to 2.05 @ 2.25 from 1.75 @ 1.90 f. o. b. Boston.

News of the Industry

Henry L. Goodman and his associate, Robert A. Ford, dealers in box coverings, passed the day Thursday with the Marvellum Company and Beveridge-Marvellum Company, of Holyoke and South Hadley Falls, Mass., respectively, going over new lines, of which samples will shortly be sent to the trade.

Charles J. O'Brien, salesman for the Baird & Bartlett Company, spent last week in Hebron, Me., accompanied by his wife.

Richard F. Piper, another Baird & Bartlett salesman, went on a hunting trip the early part of last week, shooting a number of birds.

Warren D. Thompson, a representative of the same company has purchased real estate in South Wolfeboro, N. H., on the shores of Rust Pond, which he is developing as a camp and fisherman's recreation resort. The land includes twenty acres, on which five cottages are already located. Mr. Thompson is having some overnight cabins built in the latest style possible.

Richard H. Wessell, salesman for the Arnold-Roberts Company, has taken a position as assistant to the sales manager of the H. J. Heinz Company of Masachusetts.

N. F. Davis, secretary of the Davis Paper Company, West Hopkinton, N. H., and Thomas B. Farwell, assistant general manager of the Ryegate Paper Company, East Ryegate, Vt., called on the trade Saturday, October 24, each attending the Harvard-Dartmouth football game.

The H. D. Catty-Franz Euler Corporation, wrapping paper business, has become the H. D. Catty-Franz Euler Corporation of New England, as a new corporation. Capital is $30,000, 3,000 shares $10 each, and 800 common shares having no par value. Hugh D. Catty is president.

Nearly 50 Years With Sherman Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

GREAT BEND, N. Y., October 26, 1936—Among the oldest employees at the Sherman Paper Company is Frank Soults, who has completed nearly half a century of continuous employment with the concern. Now at the age of 67 he is regarded as one of the oldest machine tenders in the industry although far from being the least active. He was 22 years old when he came to this place to cast his fortunes with the Great Bend Paper Company which was chartered in 1868 with a capital stock of $25,000 to produce straw wrapping papers and board. The paper machine he tends is the same one that was installed in 1872 although it has been revamped and changed several times. Mr. Soults has only praise for the late George E. Sherman, who he claims was among the best of employers.

"Mr. Sherman voluntarily gave us an eight-hour day and increased our wages," he said, "and he also asked us to organize believing that it was easier to bargain with us collectively than singly."

In 1914 when the late Mr. Sherman assumed ownership of the mill the old log dam collapsed and was replaced by a concrete structure. The mill was operated by water power until 1927 when the change was made to steam turbine drive. When Mr. Soults became connected with the mill it was used to produce hanging paper but during the World War specialties were turned out. For ten years following 1917 the plant produced newsprint but at present the mill is running at capacity, seven nights a week, in the manufacture of novel news. The plant has been shut down only twice, once for a brief spell during the administration of Grover Cleveland and for two years during the recent depression. The mill now employs about 35 men under the supervision of William K. Peck, who has been resident manager since 1917.

NEWSPRINT REHABILITATION PROGRESSES MARKEDLY

(Continued from page 13)

pulp and paper at Chandler, in the electoral district of Gaspe South, is constructed, as well as the buildings and machinery used for such purposes, in the manner and upon conditions laid down in the bill.

The company wishing to acquire the property must serve notice on the party to be expropriated, state what sum it is willing to pay, and name its arbitrator. If there is no response, the petitioner may proceed by default, in which case the acting Chief Justice of the Superior Court of Quebec will name a sole arbitrator. If there is response, then there will be three arbitrators, the third to be named by the judge.

The decision of the arbitrators shall be final, and is to be made after examination of the property, and hearing of the parties. The person against whom the award is granted must be paid the compensation within two months.

It is learned this evening that there is a company organized which, on the passage of this bill will immediately make arrangements with the Government to enable it to proceed with the expropriation of the Chandler Mill. The forestry concessions granted the former company lapsed when the conditions to operate the mill failed, but the presumption is that when the new group takes hold of the situation the Government will be prepared to grant the usual cutting rights in the areas formerly conceded to the first company.

Newsprint Cargo For China

The first ship to clear from the Port of Montreal this year with the object of taking a cargo of newsprint for China was the Dalbain, which sailed this week for Port Alfred, Que., to get a cargo of newsprint for Shanghai.

Pulp Production in Manchukuo

J. A. Langley, Canada's commercial secretary in Tokyo, Japan, has reported to the Trade and Commerce Department that during the early part of the present year the Government of Manchukuo granted certain lumbering concessions to four Japanese applicants with authority to incorporate pulp manufacturing companies in accordance with the Manchukuo Commercial Code. As a result the following concerns were established:

Pulp Company	Capital in Yen	Site of Factory	Wood Concession along
Japan Manchurian.....	15,000,000	.....	Lake Chinpo
East Manchurian.....	15,000,000	Kaishantun	River Tumen
Toyo	10,000,000	.....	Tumen
Manchurian	10,000,000	Hualin	River Mutan

Provision was made in their charters that each firm would be allowed to produce only 10,000 metric tons of pulp during the first year of operation, and 15,000 metric tons during the second and succeeding years, and that the pulpwood necessary for these operations would be supplied from the concessions by the Government's "Direct Felling Bureau."

It was anticipated that production would be commenced sometime during the latter half of next year, and that during 1938 some 40,000 metric tons of pulp, for use largely in the rayon industry, would be turned out by these mills. The East Manchurian Pulp Company and the Manchurian Pulp Company have had their plants under construction since last May, but the other two concerns are holding construction operations in abeyance, claiming that the production of only 10,000 to 15,000 metric tons of pulp annually is too small an amount to produce economically. The Oji Paper Mill Company contend that in its Saghalien operations 30,000 metric tons is the minimum annual output that can be produced on a commercial and paying basis. It is the opinion of the trade that it is imperative that the existing firms should amalgamate and the two mills under construction should produce the total tonnage authorized under the charter.

There is no reliable data available, says Mr Langley, regarding the forest resources of Manchukuo, although it is true that various investigations have been made, but the resulting figures have shown so much disagreement that no final deductions are possible. However, in pulp-producing circles it is estimated that wood suitable for pulp manufacture amounts to between 200,000,000 and 400,000,000 koku (one koku is approximately 10 cubic feet), while that of Saghalien is placed at 600,000,000 koku. If taken at the lower figure, the Manchurian resources will be totally exhausted within an ordinary lifetime if the 274,000 metric tons of foreign pulp now imported annually are displaced by a locally manufactured commodity.

Beauty In a Bearing

One of the largest spherical roller bearings in the world built by SKF has the dimensions 46½ inches outside diameter, 27½ inches bore and 15⅛ inches width. Twenty-

three and one-half tons of this one bearing size were purchased by Soviet Russia for their Zaporojstal Steel Works cold mill equipment designed by United Engineering and Foundry Company.

Asks Permission to Borrow $50,000

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, November 2, 1936.—Jay Leach of this city, receiver of the Miami Valley Coated Paper Company of Franklin, Ohio, on October 26, asked the United States District Court for permission to borrow $50,000 to keep the business in operation as a going concern.

The money would be secured through issuance of Receiver's Certificates which would be made a first and preferred lien on the property.

Mr. Leach also requested the appointment of a co-receiver. Leach has operated the business as Receiver since September 7.

The Miami Valley Coated Paper Company's plant is well-equipped, it is stated, and has always been considered one of Franklin's substantial paper mill enterprises.

Obituary

George E. Crafts

BANGOR, Me., October 31, 1936—George E. Crafts, aged 72, for 35 years, resident of Bangor, of many activities, business and civic and social, died at his home, 89 Poplar street, on October 26, after a brief illness, from heart trouble.

Born in Amherst, Mass., son of George Morton Crafts and Laura (Belden) Crafts, he attended the Amherst schools and Massachusetts Agricultural college. He was in the employ of the George C. Gill Paper Company of Holyoke, Mass., up to 1900, when he came to Maine as a salesman for the Eastern Manufacturing Company.

In 1904 he joined the personnel of the Orono Pulp and Paper Company, as treasurer and sales manager, succeeding Robert W. Sawyer, whose brother, Charles Sawyer, was the business manager from the time of the company's organization in 1889 with B. B. Thatcher as president.

In this position, subsequently under the late Charles F. Bragg as president, he continued until the merger of the company on January 1, 1930, with the Eastern Manufacturing Company.

He was a devoted member of All Souls Congregational Church, being a member of the board of trustees for many years; a 32nd degree Mason; a member of the city council for one term under the city manager form of government; a member of the Bangor Rotary club; a long standing member of the Tarratine club; president of the Bangor Chamber of Commerce for two years, and for some time member of the Penobscot Valley Country Club.

Surviving are his wife, Mrs. Mary Elizabeth (Hibbard) Crafts; a son, George Albert Crafts, a member of the Chicago staff of the Eastern Manufacturing Company; a daughter, Mrs. Laura C. Treworgy of Bangor; and two grandsons, Lawrence L. Treworgy, Jr., and Robert E. Treworgy.

Paul E. Graves

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., November 3, 1936—Paul E. Graves, of 87 College street, South Hadley, sales manager for the American Tissue Mills, Inc., of this city died last week at his home. He was the son of Alden L. and Mary (Burnett) Graves and was born in South Hadley, educated in the public schools of that town and has been employed by the American Tissue Mills for the past 38 years. He was a member of the Holyoke Lodge of Elks, Mt. Holyoke Lodge of Masons, Scottish Rite Body, Melha Temple and the Orchards Golf Club. Besides his parents he leaves two sisters, Mrs. Anders O. Kjoller and Mrs. Mary M. Burnett, and several nieces and nephews.

Leeds & Northrup Broadside 160

Of interest alike to power-plant executives, engineers and operating men, whether connected with central stations or with industrial plants, is a catalog-type broadside on "Power Plant Measuring Instruments, Telemeters and Automatic Controls," just issued by Leeds & Northrup. Equipments for many power-plant measurements and controls are shown and described in compact yet remarkably complete form. Specific applications are mentioned—in electrical generation and transmission, in steam generation and distribution, in hydro-power generation and in diesel power generation—in which these equipments are being used to safeguard operation and to effect operating economies. Ask Leeds & Northrup Company, 4934 Stenton avenue, Philadelphia, Pa., for Broadside 160.

Bleaching of Pulp

DIE BLEICHE DES ZELLSTOFFS. Zweiter Teil. (Bleaching of pulp. 2nd part.) Erich Opfermann and Ernst Hochberger. Berlin, Otto Elsner Verlagsgesellschaft, 1936. 416 p. About 120 illustrations. Price 40 Marks. (Vol. 3, part 2, of Technik und Praxis der Papierfabrikation, edited by Emil Heuser and Erich Opfermann.)

Part one of this volume, dealing with the chemicals used in the bleaching process, was reviewed in PAPER TRADE JOURNAL 103, No. 2:16 (1936). The second part of the volume deals with the practical side of bleaching.

Chapter one, a general introduction, covers the transformation of the incrusting materials into soluble form, and discusses the degree of digestion, bleach consumption and bleach loss, the red coloration of pulp in the early stages of bleaching and the removal of the incrustants (46 footnotes).

The bleaching by hypochlorites is discussed in Chapter two, low and high density operations being considered. Many types of apparatus are illustrated and described (77 footnotes).

The chemical and physical changes of the halfstuff during the bleaching process, including the behavior of the alpha-cellulose, alkali solubility, viscosity, copper number, ash, resins and fats, fiber length, strength properties, effect of temperature, stability of color, etc., form the subject matter of Chapter three (235 footnotes and one page of bibliography).

In Chapters four to six, the chemistry and technical aspects of the step-wise bleaching process are discussed, including the use of chlorine gas or chlorine water in the first step; the intermediate washing with water or treatment with alkali is considered. Among the chlorine processes mentioned and illustrated are those of Kellner, Ellis, John, Mead Pulp and Paper Co., Bellmer, Runkel, Wolf and Hatch, Tomlinson, Thorne, and Bradley and McKeefe. Chapter four has 190 footnotes and three pages of bibliography; Chapter five, 53 footnotes; and Chapter six, about one and a half pages of patents on various processes.

The theory and practice of washing the bleached pulp are discussed in Chapter seven (45 footnotes).

Soda and sulphate pulps are separately covered by Chapter eight, chlorine and hypochlorite being the agents considered (54 footnotes).

Special methods of bleaching are covered in Chapter nine; these include catalytic and photochemical methods, ozone, hydrogen peroxide, sodium peroxide, potassium permanganate, perborates, organic chlorine compounds, chlorine dioxide, etc. (96 footnotes and four pages of bibliography).

Chapter ten is devoted to methods of chemical purification of pulps, and includes the theoretical basis, the use of alkali and sulphite, the removal of resins and fats, purification by hydrolysis, pulps with special properties, such as low viscosity, increased reactivity, etc. (198 footnotes and five pages of bibliography).

The last Chapter considers chemical control of the bleaching process, and covers methods of analysis of the bleaching agents and the control of the bleaching bath, testing the degree of bleaching (various modifications of the methods of determining the chlorine and permanganate numbers), and the measurement of the resulting color of the pulp (84 footnotes and two pages of bibliography).

From a general examination of the volume, it would appear that the authors have thoroughly covered the subject of bleaching, and produced a book that will be of great value to both the research and the mill chemist. It is gratifying to note the large number of references to American work. From the mechanical side, the book is up to the usual standard of Elsner. C. J. WEST.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Atlanta, Ga.—The Southern Waxed Paper Company, 840 Woodrow avenue, S. W., manufacturer of processed paper products, has approved plans for new steam power house at plant and will proceed with superstructure at early date. Cost over $40,000, with equipment. General contract has been let to Samuel N. Hodges, 262 Rumson road, N. E.

Los Angeles, Cal.—The Pioneer-Flintkote Company, 5500 South Alaenda street, Vernon, Los Angeles, manufacturer of roofing and building papers, etc., has plans maturing for new additions to plant, comprising several large one-story units for different departments. A new corrugated box board manufacturing plant will be built, as well as storage and distributing buildings. Entire project is estimated to cost close to $1,000,000, with equipment. Bids are expected to be asked soon on general contract. This is part of an expansion program to be carried out by the Flintkote Company, 50 West 50th street, New York, as recently noted in these columns, first mentioned company being a subsidiary of latter organization. Company engineering department is in charge.

Buffalo, N. Y.—The Buffalo Envelope Company, 270 Michigan avenue, manufacturer of commercial envelopes and kindred paper products, has filed plans for new addition to paper-converting plant on site at 276 Michigan avenue, estimated to cost about $30,000, with equipment, and will proceed with superstructure at once. Lawrence G. Reineman is president.

Philadelphia, Pa.—The Charles A. Allen Company, 349 North Second street, manufacturer of paper boxes and containers, has recently arranged for lease of first floor in building at Jasper and York streets, formerly used for a hosiery mill, and will occupy for expansion.

Houston, Tex.—The Champion Paper and Fibre Company, Hamilton, Ohio, manufacturer of coated and other paper stocks, is considering a large addition to its sulphite pulp mill now in course of construction on the Houston ship channel, near Houston. Present project is scheduled for completion next February and will represent an investment of about $3,500,000, including buildings and machinery. It is proposed to begin work closely following on the new units, comprising several large structures for approximately double the initial capacity. Work is estimated to cost close to $3,000,000 or close to cost of the mill now being erected.

Dalton, Mass.—Crane & Co., Inc., manufacturer of writing papers, is awarding miscellaneous contracts for completion work for new three-story and basement mill addition on Flansburgh avenue, 50 x 145 feet, recently referred to in these columns, including heating installation to the Robbins-Gamewell Corporation, 68 West street, Pittsfield, Mass.; electrical work to Fred D. Retallick, 26 Dunham street, Pittsfield; and plumbing to Ford & Parker, Main street, Dalton. Entire project is reported to cost close to $100,000, with equipment. D. Herbert Pike, 30 Eagle street, Pittsfield, is general contractor.

Rome, Ga.—The Tubize Chatillon Corporation, Rome, manufacturer of viscose rayon products, has awarded general contract to the Batson-Cook Company, West Point, Ga., for two new additions to local mill, consisting of a one-story structure, 147 x 340 feet, and three-story building, 150 x 200 feet; work will also include an addition to power plant, with installation of new steam turbo-generator unit, extension to mechanical drier building and other miscellaneous expansion. Entire project is estimated to cost close to $2,500,000, including equipment, and will be placed under way at early date. Robert & Co., Inc., Bona Allen Building, Atlanta, Ga., is architect and engineer.

Georgetown, S. C.—The Southern Kraft Corporation, 220 East 42nd street, New York, N. Y., has broken ground for initial buildings for proposed new kraft pulp and paper mill on tract of about 250 acres of land near Georgetown, recently acquired, as previously reported in these columns. The mill will consist of several large units and will require close to twelve months for completion, being scheduled to be ready for service in October 1937. It will have a capacity of 625 tons of kraft paper and board products per day and will represent an investment of close to $7,500,000. Different contracts for the project will be awarded at early date. Company is a subsidiary of the International Paper Company, first noted address.

Hoquiam, Wash.—The Grays Harbor Pulp and Paper Company, and cities of Hoquiam and Aberdeen, Wash., have awarded contract to the Federal Pipe & Tank Company, Seattle, Wash., for installation of new pipe line for industrial water supply for mill of first noted company, at price of $121,143, and work will be placed under way at early date. An award for trenching has been made to Macri Brothers, 511 Twenty-first street, North, Seattle, at a figure of $117,814. The line will be run from Junction City and will be used by the Grays Harbor Company in connection with new additions to sulphate pulp mill, for which general contract recently was let to the Austin Company, Dexter-Horton Building, Seattle, and for which superstructure work is being placed under way. The mill project will cost close to $150,000, with equipment. Entire development is scheduled for completion early next year.

New York, N. Y.—The American Celilynd Company, Inc., is being organized by the British Celilynd, Ltd., London, England, manufacturer of liners for paper boxes and containers under a special process. First noted company will be the American subsidiary of the parent organization mentioned, and proposes early establishment of new plant in the United States. Large capacity will be carried out. British company is affiliated with D. Smith & Sons, Ltd., London, manufacturer of paper cartons and

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Vickery Felt Conditioners help to keep your paper machines running right through the week; no shut-downs to wash clogged felts and no taking the weights off the presses and slowing down toward the end of the week.... When felts are in uniformly perfect shape, more production as well as more uniform and more economical operation is the result.... How else can you do so much to improve both quality and quantity of machine output at such small cost?

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containers, as well as Smith's Patents, Ltd., London, an allied interest. Colman Smith is managing director of all companies noted.

Ottawa, Ont.—Hutchings & Patrick, Ltd., Queen street, manufacturer of paper specialties, has plans under way for new addition to paper converting plant, to be one-story and basement, 50 x 90 feet, estimated to cost about $25,000, with equipment. Work is scheduled to begin soon. Richards & Abra, Metclafe street, Ottawa, are architects.

New Companies, Etc.

New York, N. Y.—The Waring Central Company has been incorporated with capital of $51,000, to deal in paper products of various kinds. New company is represented by Kadel, VanKirk & Trencher, 122 East 42nd street, attorneys.

Everett, Wash.—The Soundview Pulp Company is arranging for a preferred stock issue to total $2,500,000, a portion of proceeds to be used for expansion and improvements in mill, now in progress, and other financing.

New York, N. Y.—The Metro Tag and Label Corporation has been chartered with capital of $10,000, to manufacture paper specialties of various kinds. New company is represented by the Albany Service Company, 315 Broadway, New York.

Montreal, Que.—The Howard Smith Paper Mills, Ltd., 407 McGill street, operating paper and pulp mills at Cornwall, Ont., and Beauharnois, Que., is arranging for a bond issue of $6,300,000 for general operations and financing.

Waring Envelope Co. Sold

Bradner, Smith & Co. of Chicago have purchased the business of the Waring Envelope Company, 329 East 29 street, New York City. The business has been revised under the laws of the State of New York as the Waring Central Company with Mark H. Lund as president. Frederick C. Sims, secretary of the Waring Envelope Company, continues with the new owners as secretary of the Waring Central Company. With the Lakeside Central Company, Chicago and the Southern Central Company, Memphis, Tenn., this gives Bradner, Smith & Co. its third envelope manufacturing unit.

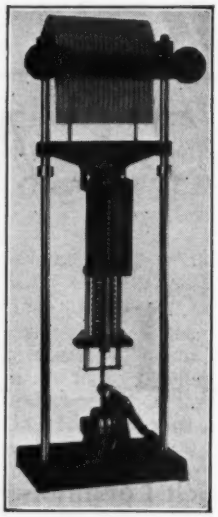
The Waring Envelope Company was organized by A. Waring Newell approximately 15 years ago. From a small beginning; it has developed a production of nearly one million envelopes daily, which can be considerably increased with present equipment. Present sales are mostly in special announcement sizes for greeting card manufacturers, as well as tissue lined and hand made specialties. For the present, the new owners intend to conduct the business along the same lines, although extensive improvements in manufacturing facilities are contemplated, mainly for the purpose of improving quality and service to customers.

Argentina Paper Industry Expands

WASHINGTON, D. C., November 4—From records compiled by the Direction of Commerce and Industry of the Ministry of Agriculture, the Argentine paper industry has made rapid strides during the past few years, and there is every reason to believe that this improvement in production as well as quality will be continued. From an actual statistical point of view it is interesting to note that during the year 1933 the total production of the industry was 74,354, tons, while during 1935 the output increased to 96,877 tons or by 30 percent.

Thwing Shopping Bag Tester

The Thwing shopping bag tester illustrated herewith is designed to indicate in pounds the force required to pull out the handles from a shopping bag. The efficiency of a shopping bag depends on how well the handles are fastened to the bag. It is at this point that the bag usually breaks down when it is filled with commodities and carried around. The handles may come loose and make the bag useless.



The Thwing shopping bag tester was developed to actually show how much load can be applied to the bag, before the handles pull out.

The shopping bag is folded at both sides to permit getting the middle portion in the jaws and it is clamped in the wide jaw of the tester. The handles are placed around a specially designed clamp which duplicates as closely as possible the effect of a hand grip. The load is applied to the bag by turning the handle at the bottom of the tester, which exerts a constantly increasing pull on the handles. As the load is applied, the force in pounds is shown on the calibrated scale on the front of the instrument. When rupture takes place, the pointer automatically stops and indicates the force in pounds necessary to cause the break.

The tester has a high gear ratio so that for practical purposes it is unaffected by variations in the speed with which the operator revolves the handle.

The instrument is portable and can be used by the salesman to actually demonstrate the qualities of his bags to the prospects.

The tester is 31 inches high and 10⅝ inches wide and weighs less than 30 pounds. It is ruggedly constructed and there are no parts to get deranged in transportation.

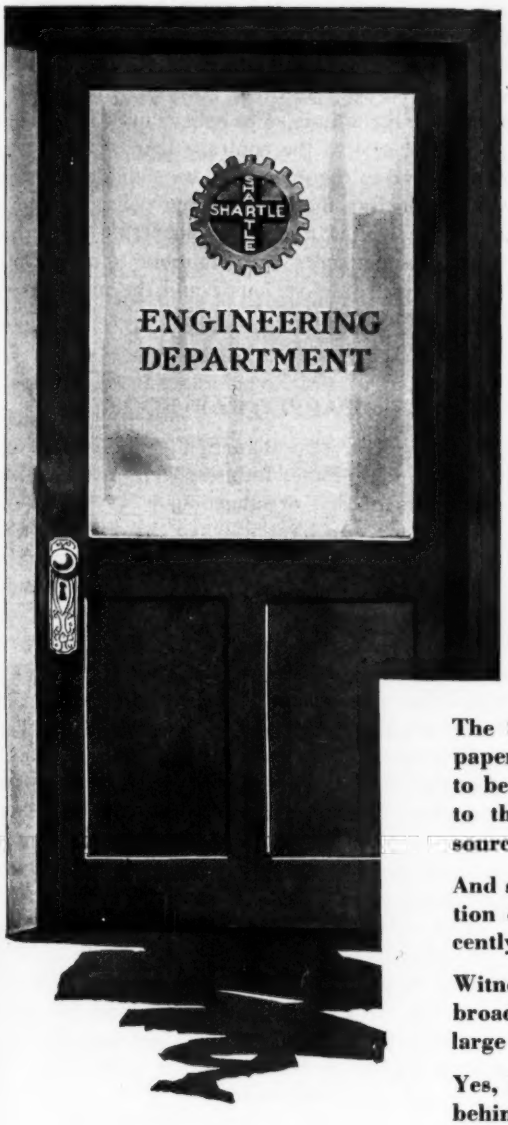
The maximum amount of pull exerted in this tester is three hundred pounds. The construction is steel and iron, the base and top framework being cast iron and the supporting frame being four post steel construction. The tester is nicely finished.

The tester can be used for other purposes by the addition of the proper holding grips, but it is not intended to be used as a tensile tester where the tolerance of accuracy must be held within close limits.

Directed To Return Shipment of Waste Paper

[FROM OUR REGULAR CORRESPONDENT]

BROWNVILLE, N. Y., November 2, 1936.—The trustee for the defunct Philemon Creek Paper Company has been directed to return a shipment of waste paper to the Great Lakes Paper Company, of Buffalo. Shipment was made by the latter to the bankrupt concern about a year ago when an attempt was being made to reorganize it. At that time Ralph L. Hyde, of Syracuse, was appointed trustee by a federal court judge for the purpose of reorganizing. Several months ago the Great Lakes concern started proceedings to receive the paper, or its value, plus freight and demurrage charges, and to make the trustee responsible. The matter involved several hundred dollars and the case was heard by Judge Conboy. A ruling by Judge Conboy specifies that the Great Lakes Paper Company shall have returned what is left of the shipment but that the evidence was not sufficient to warrant a refund on such of the paper as was used.



Behind This Door *Barnacle Bill* was born

The Shartle engineering staff is probably the largest the paper machinery industry has ever known. It is, therefore, to be expected that an occasional outstanding contribution to the art of paper making should eminate from this source.

And such is the case—witness the development and perfection of Tugboat Annie, Barnacle Bill—and still more recently, the new Rotobeater.

Witness the rise of the famous Miami line of jordans, the broad and all-inclusive line of centrifugal pumps, and the large line of valves.

Yes, behind this door Barnacle Bill was born. And it is behind this door that other developments of major importance to paper makers are being worked out.

Possibly you have an idea that you would like to submit for consideration. If so, send it in.

SHARTLE BROTHERS MACHINE COMPANY
Middletown, Ohio
Division of
The Black-Clawson Company
Hamilton, Ohio

SHARTLE

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FUTURE MEETINGS

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Fourth Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway, Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

THE ELECTION

Never in the history of the country probably has a political victory been scored to equal that of President Roosevelt in the national election on Tuesday. At this writing it seems probable that the President has won the electoral votes of all but two states.

This result was not generally, at least, expected. Judging, in fact, from the poll of the *Literary Digest*, which in the past has always so accurately foretold the results of the national elections, it seemed likely that Mr. Roosevelt would not be returned to office. It was explained by persons skilled in such matters, however, that owing to the unusual circumstances that prevailed, the *Digest* poll this year would not likely prove as trustworthy as usual and that because of this reason a considerable factor of inaccuracy should be taken into consideration in judging the *Digest's* figures. The fact that several other national polls differed so greatly from the *Digest* poll made this criticism seem reasonable. But, except to those much more intimately acquainted with such matters than the average man, a rather close election seemed indicated so that the actual result can be said to be surprising, to say the least.

But regardless of the result, it is good to know that the election is over and that the country will not continue to be disturbed as it has been for the past several months. It must be remembered that in the heat of the campaign many things were said that should be not accepted as gospel truth. Many people were honestly and seriously disturbed by what during the recent hectic weeks it was said Mr. Roosevelt would do in the event of his reelection. Much of this forecasting of events can undoubtedly be discounted. We, with all other good citizens, will at any rate hope so and continue so to believe until there is more substantial evidence to the contrary than seems apparent at present. And in the meantime, we should cease to feel that we are partisan members of any political party, but citizens of the United States and cooperate whole-heartedly in the common endeavor to continue to make this the most prosperous, the most happy and the most desirable country in the world in which to live.

1936 TAPPI YEAR BOOK

Copies of the 1936 Year Book of the Technical Association of the Pulp and Paper Industry have just been issued to the members of that organization.

To those of us who have watched this annual publication, it has been of interest to note its continuous growth in size, in spite of the efforts of the compiler to condense all material to a minimum of space. This growth is due to two things: the steady net membership increase even during the depression years, and the cumulative record of its publications, services and activities.

Reviews of earlier issues have dwelt on the basic contents. This one will mention the new features. In the growth of the association it is noteworthy that the increase in recent years has been made up of a large number of mill managers and other executives, including superintendents. In this connection it is interesting also to note the large number of members who have been promoted from positions as chemists and engineers to that of mill manager. This trend is likely to continue with added impetus in the next few years since there is a distinct demand for men with a technical background for the important jobs in the many new mills that are being built. It is evident that the technical man has come into his own in the pulp and paper industry.

This type of leadership is a very healthy one.

The organization of the association itself is of interest. Nearly thirty committees made up of those who are best qualified, are carrying on the professional work of TAPPI. The work of these committees is listed under the head of committee projects, of which there are about ninety in progress. These projects will lead eventually to factual meeting programs, standards, recommended practices and monographs.

Six research appropriations are listed. By good management of its finances the association has been able to accumulate a reserve that it has begun to use to aid its committees in obtaining necessary factual knowledge in their effort to learn the real fundamentals of pulp and paper making. In time, these appropriations will return much to the industry in the way of improved processes. Each appropriation is sponsored by a committee that guides its application along the most practical and useful lines.

Each year finds the addition of more association stand-

ards, particularly in the testing field. The list of Special Reports on Manufacturing Problems is imposing. More than 260 of these reports dealing in particular with the practical aspects of pulp and paper making have been issued. The industry is indeed fortunate that it has so many companies and individuals who are willing to cooperate in making these reports of real value by contributing their advice and records of experience.

The activities of the local sections have been put on an established basis. Eight local groups are in existence, each of which hold meetings at frequent intervals, many on a monthly basis. The caliber of the speakers on their programs and the treatment of their subjects has been kept in harmony with the national organization's policy of dealing with the basic facts. Sales talks have almost entirely disappeared and the growing attendance at meetings and the interest in the formation of new sections are indications that the Association is a professional organization of a high order, and the accumulation of factual wealth which always precedes the increase of material wealth is the aim of all the association's sections. The attendance at many of the section meetings now exceeds the attendance a few years ago of the national body.

We have no doubt that the progress of the association outlined in its current Year Book is but the beginning of an era of greater service to the pulp and paper industry and we extend our congratulations to the association that it has the type of member that is willing and qualified to extend this outstanding service.

Kit Warner Passes On

K. S. Warner, president of the John F. Sarle Company, Inc., 50 Hudson street, New York, died on Saturday, October 31, at his home in Westfield, N. J.

Mr. Warner was born in Franklin, Ohio. He moved to Holyoke, Mass., in 1890, where he was connected with the Fairfield Paper Company, Woronoco, Mass. He came to New York in 1930 to take charge of Plymouth Paper Company's New York office. Mr. Warner joined the John F. Sarle organization as salesman in 1907, and the following year was made manager; in 1915, when the firm was incorporated, he was made president and treasurer, in which capacity he was serving at the time of his death.

Mr. Warner was a director of the Peoples Bank and Trust Company, and the Westfield Building and Loan Association. He was also a past president of the Paper Trade Association of New York City and the National Paper Trade Association.

Three Paper Mills Increase Wages

LOCK HAVEN, Pa., November 1, 1936—Three paper mills in Lock Haven and Johnsonburg announced a 10 per cent wage increase today to 1,975 employees, effective December 1. The mills are those of the New York and Pennsylvania Company and the Castanea Paper Company, employing 825 in Lock Haven, and the Castanea company's plant at Johnsonburg, employing 1,150.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Months	1936	1935	1934
January	76.1%	65.8%	.....
February	77.9%	70.0%	.....
March	76.0%	70.5%	.....
April	82.3%	70.0%	.....
May	81.6%	69.4%	.....
June	80.7%	72.3%	.....
July (b)	80.0%	67.8%	.....
August	81.5%	70.9%	.....
September (c)	84.0%	75.0%	59.4%
October	.....	75.6%	64.7%
November	.....	75.3%	61.7%
December (a)	.....	74.3%	62.1%
Year	.....	71.2%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1936		CORRESPONDING WEEKS, 1935	
*October 3	85.4%	October 5	75.2%
*October 10	87.2%	October 12	76.3%
*October 17	87.0%	October 19	74.8%
*October 24	86.4%	October 26	76.4%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks			
Ratio Limits	Oct. 3, 1936	Oct. 10, 1936	Oct. 17, 1936	Oct. 24, 1936
0% to 50%	70	53	54	38
51% to 100%	260	272	261	199
Total Mills Reporting	330	325	315	237

* Subject to revision until all reports are received.
These data exclude (a)—Christmas Day, (b)—Fourth of July, (c)—Labor Day.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents. of operation, based on "Inch-Hours," were as follows:

Months	1936	1935	1934	Months	1936	1935	1934
January	61%	61%	....	July	69%	59%	....
February	67%	67%	....	August	75%	65%	....
March	68%	67%	....	September	76%	69%	62%
April	70%	61%	....	October	....	76%	63%
May	68%	61%	....	November	....	70%	56%
June	68%	65%	....	December	....	60%	(a)53%

Week ending Oct. 3, 1936—80%
Week ending Oct. 10, 1936—81%
Week ending Oct. 17, 1936—81%
Week ending Oct. 24, 1936—82%

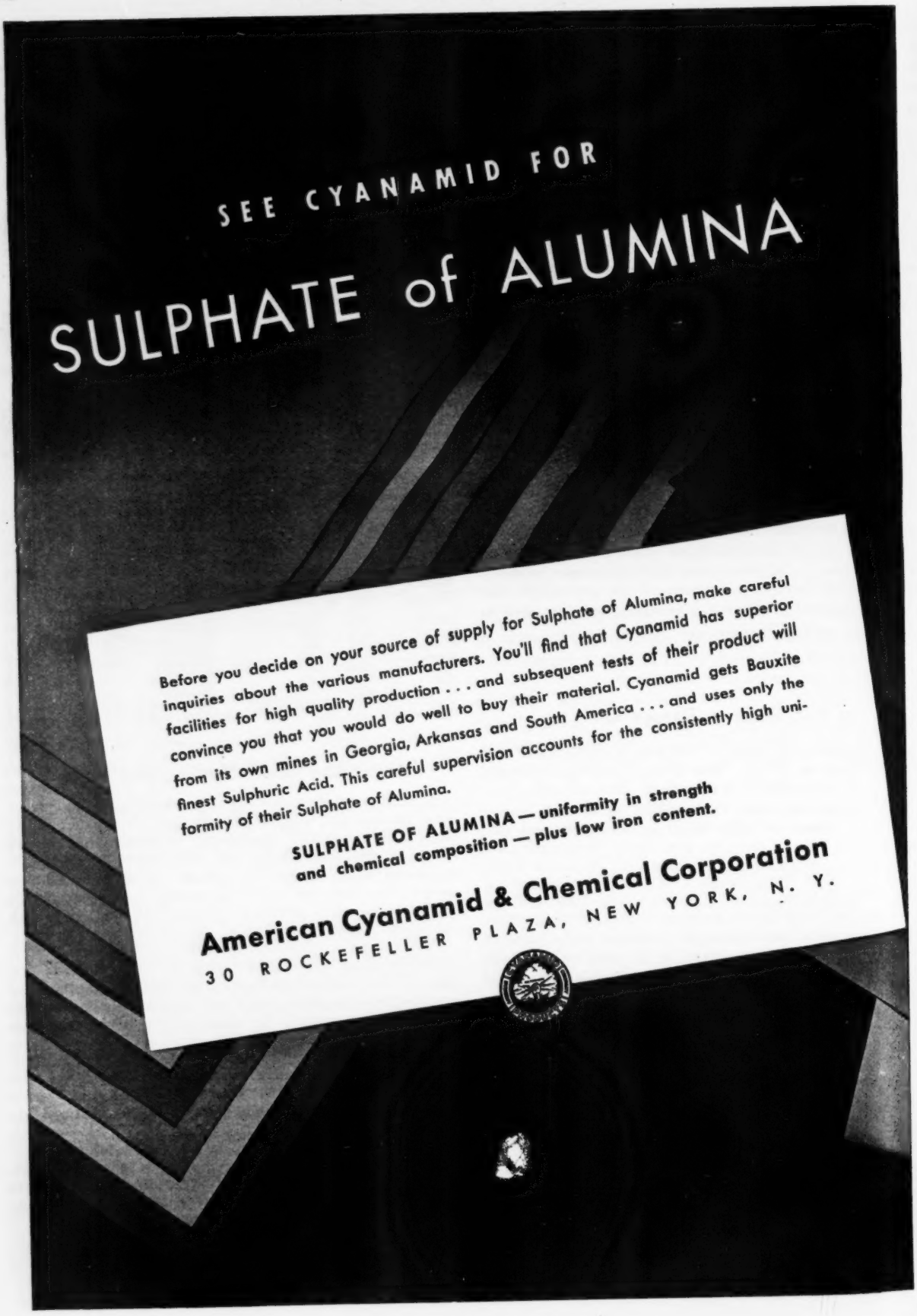
Argentina Good Market For Paper

Argentina offers a distinctively encouraging and promising market for wrapping paper and fine paper at the present time but it is reasonable to believe that imports of paper into that market will decrease in proportion to an improved local industry which has been developing during the past few years, according to a report to the Department of Commerce from DuWayne G. Clark, Assistant Commercial Attache, Buenos Aires.

The variety of paper in demand in Argentina in such, however, as to render it economically impractical to produce certain specialized types and kinds of paper and it is expected that these types will continue to be imported from overseas sources for many years, the report states.

The position of foreign manufacturers of paper in the Argentina market will undoubtedly continue to be endangered by the domestic industry in years to come but that does not obviate the fact that sales possibilities are good at present and should continue to be so for some time, Mr. Clark reported.

While the future position of United States manufacturers in the Argentina paper market is not very bright due to the lower prices quoted by European competitors, the sale of specialized items produced in the United States should continue and may probably be increased but it is not believed that the country will again offer the sales opportunities which existed several years ago, according to the report.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Before you decide on your source of supply for Sulphate of Alumina, make careful inquiries about the various manufacturers. You'll find that Cyanamid has superior facilities for high quality production . . . and subsequent tests of their product will convince you that you would do well to buy their material. Cyanamid gets Bauxite from its own mines in Georgia, Arkansas and South America . . . and uses only the finest Sulphuric Acid. This careful supervision accounts for the consistently high uniformity of their Sulphate of Alumina.
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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Delaware Valley TAPPI Discusses Paper Use Requirements

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry met at the Engineers Club, Philadelphia, Pa., Friday evening, October 30, 1936. H. C. Schwalbe of Dill & Collins, Inc., presided as Chairman.

Committee Appointments

Chairman Schwalbe announced the following committee appointments:

PROGRAM COMMITTEE—G. E. Landt, Continental Diamond Fibre Company, Bridgeport, Pa., Chairman; J. R. Atwater, Dill & Collins Inc., Philadelphia; A. M. Ball, Hercules Powder Company, Wilmington, Del.; H. L. Becher, Agasote Millboard Company, Trenton, N. J.; F. W. Brainerd, Scott Paper Company, Chester, Pa.; Mr. Bratton, Pusey & Jones Company, Wilmington, Del.; C. C. Stewart, Stewart Paper Company, Philadelphia; F. A. Steele, N. J. Zinc Company, Palmerton, Pa.; G. L. Schwartz, E. I. du Pont de Nemours & Co., Wilmington.

MEMBERSHIP COMMITTEE—V. Jacobsen, National Aniline & Chemical Corporation, Philadelphia, Chairman; Fred Streicher, Dill & Collins Inc., Philadelphia; E. A. Ellis, Downingtown Manufacturing Company, Downingtown, Pa.; J. A. Fritz, National Oil Products Company, Harrison, N. J.; G. F. Hom, Messinger Bearings Company; P. M. Loddengaard, Bulkley, Dunton & Co., New York; Leslie Justice, Glassine Paper Company, W. Conshohocken, Pa.

ARRANGEMENTS COMMITTEE—C. A. Shubert, Dill & Collins Inc., Philadelphia, Chairman; E. J. Albert, Thwing-Albert Instrument Company, Philadelphia; G. B. Martin, General Dyestuff Corporation, Philadelphia; E. Niederauer, Dill & Collins Inc.; S. D. Reynolds, Container Corporation of America, Manayunk, Pa.; John Roslund, Moore & White Company, Philadelphia; F. G. McAndrews, McDowell Paper Mills, Manayunk, Pa.

Printing Paper Requirements

William R. Maull, vice-president of Dill & Collins Inc., Philadelphia, gave an interesting talk on the fundamentals of printing and the use requirements of book paper. He first described the three main printing processes—letter press (using relief plates) lithography (the offset process as used today) and intaglio (rotary and web bed gravure).

Limiting his talk to flat bed work with relief plates, he described how photo-engraving plates were made. Papers for this work should be level, have uniform sheet density and have a cushion effect with ability to spring back. English finish papers can take a 133 screen but for finer work coated papers must be used.

For mailing pieces strength is required. This requires the use of long fibers and some printing properties must be sacrificed. When longer fibers are used the sheet must be level and made of stock that is slow enough to give good formation. The wet pressing, drying and calendering must be carefully controlled.

Bond and Writing Papers

The second speaker was Hugo H. Hanson, President of W. C. Hamilton & Son, Miquon, Pa. who discussed the use requirements of bonds and writing papers. Mr. Hanson said, in part, that bond papers have a somewhat pebbly surface that is more antique than smooth. Half-tones are seldom used but instead line etchings are used for printing.

Bond and other hard papers must be made to run on the presses at high speed. Among the troubles experienced are curl, wave, static, bad trimming and torn sheets. Among the talking points for such papers are color (blue-white papers are preferred today). Better color is usually obtainable at the sacrifice of strength. The burst usually runs between 30 and 40. Another point is register (paper expands when moisture from ink is absorbed).

Most bond papers are strong. They should have good erasure properties and not be too rough (the pen used in signing letters should not catch in the surface of the sheet). The paper should be clean. It is usually watermarked (sulphite sheets by a rubber roll and rag sheets by a wire dandy roll). The printer does not like a watermark that is too prominent nor does he like much cockle (the effect produced by running bond papers through a size tub of glue or converted starch and dried without tension). The consumer of such papers likes to have both cockle and watermarks. Starch is used to harden and level the sheet and particularly to improve its sizing character; glue does both. There is at present a great demand for opaque papers. Bonds retain from 50 to 60 per cent of the heavy pigments such as titanium, dioxide and zinc sulphite. The former costs about 18 cents a pound while the latter is about 12 cents a pound.

Ledger papers have a furnish similar to bonds. They must have a smooth surface for handwriting, good erasure properties and have good strength, color, and cleanliness.

Mimeo bonds are used for duplicating purposes and should have some bond characteristics but not be so hard. They must absorb mimeograph ink rapidly and not offset

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nor strike through. (Many are printed on both sides). They must be sized enough for signatures. Fillers are used to prevent strike through.

Quick drying vellums are used for financial and other circulars and must be opaque and quick drying.

Linen writings are used for papeterie and personal stationery. They must be well sized for handwriting, have good color and be attractive in finish.

Envelope papers must be well sized, have fair color and must fold well. To help machine operations they must be stiff.

Drawing papers need a rough toothy surface and a fine grain (antique surface). They must be sized so that they may be scraped with a scalpel.

Offset papers are used in the planographic system of printing. Usually zinc plate impressions are transferred to a rubber blanket and from that to the paper. A great amount of color work is done on this type of press due to the low cost of operation. The impression is not as clear as that obtained when a plate to paper process is used. Such papers must be springy, not too hard, easy to run (free from curl or wave), be well sized on the surface or heavily beaten (the ink used is very tacky and will pick up fibers and thereby dirty the press).

Other papers mentioned were blueprint, meter papers and map papers, each having special use requirements.

All of these papers must have good ink receptivity; however, the progress that has been made in ink manufacture has reduced the special efforts formerly required in paper manufacture to obtain this property.

Those Who Attended

Among those present were:

H. L. Becher, Agasote Millboard Company, Trenton, N. J.; A. E. Waugh, U. S. Rubber Products Inc., Philadelphia, Pa.; G. F. Hom, Messinger Bearings Inc.; W. F. Mitchell, Pennsylvania Salt Manufacturing Company, Philadelphia; R. H. Underdown, American Dyewood Company, Philadelphia; C. J. Kern, Moore & White Company, Philadelphia; J. S. Merritt, Brooke Engineering Company; H. F. Hoffman, General Dyestuff Corporation, Philadelphia; Ludwig Starck, Wilson Wire Works, Inc., Kearny, N. J.; M. Dann, Krebs Pigment and Color Corporation, Newport, Del.; A. M. Ball, Hercules Experimental Station, Wilmington, Del.; R. W. Ball, Krebs Pigment and Color Corporation, Newport, Del.; J. H. Fritz, National Oil Products Company, Harrison, N. J.; Philip Shapiro, Royal Electric Sign Company, Philadelphia; E. V. Furlong, Philadelphia; F. W. Varden, Barber Company Inc., Philadelphia, Pa.; Leslie Justice, Valley Forge Laboratories, W. Conshohocken, Pa.; A. McInnes Jr., Pusey & Jones Corporation, Wilmington, Del.; S. M. Bratton, Pusey & Jones Corporation, Wilmington, Del.; E. V. Graves, Mead Corporation, Philadelphia; M. C. Maxwell, McDowell Paper Mills, Manayunk; J. T. Halladay, Container Corporation of America, Manayunk; S. D. Reynolds, Container Corporation of America, Manayunk; L. Houloose, Mazer Paper Company, Lansdowne, Pa.; A. Shnabel, same company; Robert Nelson, Glassine Company, W. Conshohocken, Pa.; W. E. Brow, Container Corporation of America, Manayunk; C. E. Roth, Dill & Collins Inc., Philadelphia; Ward Harrison, Riegel Paper Corporation, Milford, N. J.; C. W. Hoffman, Riegel Paper Corporation, Milford, N. J.; Sidney Hausman, Congoleum-Nairn Inc., Cedarhurst, Md.; F. E. Macy, Dill & Collins Inc., Philadelphia; H. C. Schwalbe, same company; R. G. Macdonald, secretary of TAPPI, New York, N. Y.; C. M. Connor, Valley Forge Laboratories, W. Conshohocken, Pa.; J. d'A. Clark, Scott Paper Company, Chester, Pa.; J. D. Davis, Dill & Collins Inc., Philadelphia; L. W. Whitaker, same company; C. W. Rivise, Caesar & Rivise, Philadelphia; A. M. Cooper, Westinghouse Electric and Manufacturing Company, Philadelphia; G. E. Landt, Continental Diamond Fibre Company, Bridgeport, Pa.; J. R. Atwater, Dill & Collins Inc., Philadelphia; E. J. Albert, Thwing-Albert Instrument Company, Philadelphia; John Roslund, Moore & White Company, Philadelphia; Paul Hodges, Scott Paper Company, Chester, Pa.; Wm. O. Marshall, Mathieson Alkali Works Inc., New York, N. Y.; Charles McDowell, McDowell Paper Mills, Manayunk; C. A. Shubert, Dill & Collins Inc., Philadelphia; W. M. Shoemaker, National Vulcanized Fibre Company, Yorklyn, Del.; G. L. Schwartz, Du Pont Experimental Station, Wilmington, Del.; E. F. Anderton, Scott Paper Company, Chester, Pa.; M. G. Benson, Dill & Collins Inc., Philadelphia.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has announced that the following have been elected to membership:

Edwin O. Hemstreet, representative, the Carborundum Company, attended the Aylmer Collegiate Institute, Aylmer, Ont.

James L. Jardine, managing director, James Brown & Co., Ltd., Esk Mills, Penicuik, Midlothian, Scotland, is a graduate of Heriot-Walt Technical College, Edinburgh.

Arries L. Johnson, plant engineer, International Paper Company, Otis Mill, Chisholm, Maine, is a 1912 graduate of Cornell University.

Paul Kellogg, president, Stevenson & Kellogg, Ltd., management engineers, Montreal, Que., is a 1911 graduate of the Massachusetts Institute of Technology, and was formerly Paper Buyer for Larkin & Co., Buffalo, N. Y. and the United Drug Company, Boston, Mass. He was also factory manager of the Kalamazoo (Mich.) Stationery Company and member of the research staff of the National Industrial Conference Board, New York, N. Y.

Herbert O. Keay, (reinstatement) manager of research laboratories, Consolidated Paper Company, Ltd., Three Rivers, Que., is a 1900 graduate of the Massachusetts Institute of Technology.

Heinz A. Lips, student, New York State College of Forestry, Syracuse, N. Y.

Leslie L. Larson, chemist, Weyerhaeuser Timber Company, Pulp Division, Everett, Wash., is a 1936 graduate of the University of Idaho.

Albert T. Maasberg, chemist, Cellulose Division, Dow Chemical Company, Midland, Mich., is a 1936 graduate of the New York State College of Forestry, Syracuse, N. Y.

Frank J. McCourt, Jr., chemical engineer, International Paper Company, Glens Falls, N. Y. is a 1929 graduate of the Rensselaer Polytechnic Institute, and was formerly chemical engineer for the Imperial Color Works, Glens Falls, N. Y.

Thomas McDowell, managing director, Thomas McDowell, Ldt., London, England, was formerly Department Engineer of Ewart & Son, Ltd., London.

James MacGregor, managing director of Ernest Scott & Co., Ltd., and George Scott & Son, Ltd., chemical engineers and soda recovery specialists, London, England.

William F. Mitchell, technical service engineer, Pennsylvania Salt Manufacturing Company, Philadelphia, Pa. is a 1933 graduate of the Georgia School of Technology, and was formerly with the Champion Fibre Company, Canton, N. C.

W. Raitt, pulp and paper research engineer, Woodend, Dorking, England. Raitt was formerly with the Forest Research Institute at Dehra Dun, India, and at present in Manila doing special work on bamboo.

Walter H. Randall, chief engineer, Keyes Fibre Company, Waterville, Maine, and was formerly with the Bell Laboratories, New York City, and the General Electric Company, Schenectady, N. Y.

Walter A. Sherman, student, New York State College of Forestry, and recently with the Flambeau Paper Co., Park Falls, Wis.

Gordon A. Sutton, chief chemist, St. Lawrence Paper Mills, Ltd., Three Rivers, Que. is a 1930 graduate of McGill University and was formerly with the Abitibi Power and Paper Company, Iroquois Falls, Ont., and the International Paper Company, Three Rivers, Que.

W. J. Walker, superintendent of Pulp and Paper Laboratory of the Industrial Committee of Savannah, Georgia, is a 1924 graduate of Cornell University and was formerly with the Great Northern Paper Company, Millinocket, Maine, the Ontario Paper Company, Thorold, Ont., and the International Paper Company at Glens Falls, N. Y. and Gatineau, Que.

Edward B. Wardle, (reinstatement) consulting engineer, Consolidated Paper Corporation, Ltd., Grand Mere, Que. is a 1899 graduate of Dartmouth and was formerly engineer for Tower & Wallace, New York, George F. Hardy, New York and the Laurentide Company, Grand Mere, Que.

Leslie E. Wellman, chemist, Nekoosa Edwards Paper Company, Port Edwards, Wis., is a 1930 graduate of Oshkosh Teachers College.

Louis-Pierre Widerkehr, manager, Andre Sherb, S.A., Turckheim, Haut-Rhine, France.

Robert S. Yates, engineer, John H. Heald Company, Lynchburg, Va. is a 1935 graduate of the Virginia Polytechnic Institute.

Julius Bekk, director of the laboratories of G. H. Buhrmann's Papiergroothaudel, N. V., Amsterdam, Holland, a graduate of the Technische Hochschule, Berlin and the University of Berlin.

R. G. Carson, representative, Solvay Process Company, Chicago is a 1926 graduate of Northwestern University and was formerly with the Grigsby Grunow Company.

Harold Crabtree, president, Howard Smith Paper Mills, Ltd., Alliance Paper Mills and the Canada Paper Company.

Frederick A. Craig, foreman papermaker, James Cropper & Co., Ltd., Burnside Mills, Kandal, England.

Alfred D. Collins, chief chemist, New Zealand Pulping Mills, Ltd., Auckland, N. Z. a 1922 graduate of Manchester University, was formerly chemist for Olive and Partington, Manchester, England.

Thomas M. Cook, control chemist, Racquette River Paper Company, Potsdam, N. Y. is a 1935 graduate of the New York State College of Forestry.

George W. Dodge, chief engineer, Paper and Industrial Appliances, New York, N. Y. is a 1901 graduate of Pennsylvania State College and was formerly engineer for the American Writing Paper Company, Holyoke, Mass., Fred T. Ley, Perryville, Md., Brompton Pulp and Paper Company, East Angus, P. Q., Ogden Minton Company, Greenwich, Conn. and the International Paper Company, New York, N. Y.

Harry C. Fisher, chief chemist, The Gardner-Richardson Company, Middletown, Ohio is a 1923 graduate of the University of Cincinnati.

Hermann C. Fleischer, technical adviser, Swan Hill Paper Company, Ltd., London, England and technical managing partner, Papierfabrik Fleischer O.H.G., Eislingen, Germany, is a graduate of the Technische Hochschule, Karlsruhe, and the University of Halle.

Gordon A. Franklin, chemist, Jonquier Pulp Company, Ltd., Jonquier, P. Q. is a 1930 graduate of Queens University and was formerly with the Abitibi Power and Paper Company, Iroquois Falls, Ont., Canadian Johns-Manville Company, Asbestos, Que., and Price Bros. Ltd., Kenogami, Que.

Laurence G. Harris, laboratory assistant, Pacific Mills Ltd., Ocean Falls, B. C. is a 1933 graduate of the University of British Columbia.

Harry J. Hosking, director of laboratory, Foster D. Snell, Inc., Brooklyn, N. Y. is a graduate of the University of New Hampshire and Cornell University and was formerly research chemist for the R. and H. Chemical Company, Niagara Falls, N. Y.

TAPPI Notes

The Annual Meeting will be held February 22-25, 1937 at the Waldorf Astoria Hotel, New York City. Individuals wishing to present papers should notify the secretary of TAPPI, R. G. Macdonald, 122 E. 42nd street, New York, at once. Manuscripts in triplicate are due not later than December 15, 1936.

R. L. Weldon, formerly Manager of the International Paper Company Engineering Department, is now President of the Bathurst Power & Paper Corporation, Bathurst, N. B.

Fred Schorken formerly chemist for the St. Regis Paper Company, Norfolk, N. Y. is now with the Filer Fibre Company, Manistee, Mich.

E. N. Wennberg formerly of the Continental-Diamond Fibre Company is now superintendent of the Paper Mill of the Moore & Thompson Paper Company, Bellows Falls, Vt.

H. P. Cannon formerly production manager of the Container Corporation of America, Manayunk, Pa. is now assistant to the vice president of the Upson Company, Lockport, N. Y.

J. F. Ohlson, formerly Chemist for the Oxford Miami Paper Company, W. Carrollton, Ohio, is now with the Continental-Diamond Fibre Company, Bridgeport, Pa.

Paul Hodges formerly of the Gulf States Paper Company, Tuscaloosa, La. is now with the Scott Paper Company, Chester, Pa.

J. d'A. Clark, C. R. Van de Carr and G. H. Mead, TAPPI members, have been elected Directors of the New Brunswick Pulp & Paper Corp., Brunswick, Ga.

M. D. Bardeen has been made manager of the Lee Paper Company, Vicksburg, Mich.

Hercules Powder Co. Acquires Subsidiary

[FROM OUR REGULAR CORRESPONDENT]

WILMINGTON, Del., October 31, 1936—Following the regular board of directors meeting, R. H. Dunham, president of Hercules Powder Company, announced that, effective November 2, 1936, Hercules will acquire the assets of its subsidiary, Paper Makers Chemical Corporation. Paper Makers Chemical Corporation has been operated as a separate company since October, 1931, when it became associated with Hercules.

The business, formerly conducted by Paper Makers Chemical Corporation, will be continued by the Paper Makers Chemical Department of Hercules Powder Company. W. J. Lawrence, formerly president of PMC, has been elected a vice president of Hercules Powder Company and general manager of its Paper Makers Chemical Department.

The Currier Size Tester*

By F. D. Broadbent, C. Brown, A.M.C.T., and H. A. Harrison

Of the methods for determining the degree of internal sizing of paper by measuring its resistance to the penetration of liquids, those involving flotation are by far the most widely used. They are essentially visual, and the one most commonly used is the dry indicator method adopted as a standard by TAPPI, which is by now too well known to need description here. Other flotation methods which rely on the penetration of aqueous solutions of electrolytes are gradually falling into disuse, owing to complications set up by selective adsorption effects.

Instrumental methods for determining internal sizing degree are not well known in this country; and since we have been fortunate enough to have had possession of one of the latest instruments to be developed for this purpose, we feel that our impressions of it may be of some interest.

The Currier size tester was designed by L. C. Currier some two or three years ago; but we believe that until quite recently our own equipment was the only one in England. It is patented in this country (B.P. 403,304), and arrangements have just been concluded for it to be manufactured here under license, in a modified form.

Description of the Instrument

The apparatus is essentially a device for wetting one side of the sample under test, and keeping it wet until enough of the water has penetrated to enable an electric circuit, containing an amplifying valve, to be completed, the end-point being indicated on a meter. The sample is placed on a metal plate, and water applied to it by means of a circular felt about 1 sq. in. in area. The felt, backed by a coarse Monel wire screen, is maintained in a saturated condition with distilled water from an inverted bottle by means of a specially constructed cap. The felt and plate are electrically connected to the indicating circuit; and the time elapsing between the moment the sample is wetted and the movement of the milliammeter needle past an arbitrary end-point (by measuring the anode current in the valve circuit) indicates the sizing value of the sample.

Two circuits are available; one for normally sized papers (hard-sized circuit), and one for poorly-sized papers of the water-leaf type (slack-sized circuit). It is seldom necessary to employ this latter, and for all normal papers the hard-sized circuit is to be preferred.

Precautions Necessary

There are several precautions to be taken when using the instrument. The voltage of the batteries should be checked periodically, and each battery replaced when required; the current drain on them is so small, however, that they last for several months unless they are faulty. We find that it is advisable to leave the instrument for 10-15 minutes after switching on, before carrying out any tests, to allow the batteries to adjust themselves. Before commencing tests, and periodically during tests, the instrument should be standardised. This is quickly carried out by adjusting a rheostat until the milliammeter reads 1.0.

The bottle should be filled with distilled water; the felt must be clean and fully saturated, and should show a slight outward bulge of about 1-16th in. (caused by the coarse backing-screen).

During the test, the sample should be wetted over the entire area of the felt; if it is not, either the position of the bottle should be altered, or the bottle cap unscrewed a little. The bottle must be lowered gently into contact with the sample, and the metal plate thoroughly dried with blotting paper after each test.

Although most papers are non-conductors, an insulating grid paper of mitsumata fibre is provided for use with papers containing carbon black, etc., which behave as conductors. This grid paper, which is very thin (0.75 mil.) and perfectly insulating, is interposed between the metal plate and sample, but it is so pervious to moisture that immediately the water has penetrated the sample only a very slight further resistance to water flow is encountered; this causes a slight time lag, which, however, is constant, and can be allowed for.

In the American instrument, provision has been made for keeping the metal plate at a thermostatically-controlled temperature of 40 deg. C. by means of an electric bulb under the plate, operated by a DeKhotinsky thermocouple; this is intended to overcome variations due to changes in humidity and temperature. This control has probably been developed to combat extreme American conditions of temperature and humidity, but we believe it to be unnecessary, and it has been omitted from the British model, thus reducing the price of the instrument very appreciably.

The TAPPI standard dry indicator method has probably received more attention and is more widely used than any other method, and various modifications and improvements in its technique have been adopted from time to time. In careful hands it gives reasonably accurate and duplicable results, and for this reason it was used through the paper on sizing given by one of us in 1932. There are, however, three operating difficulties:—(1) The necessity for good light, (2) the difficulty of accurately judging the end-point, especially with deeply colored papers, and (3) eye and body fatigue when a large number of tests are required.

The present apparatus undoubtedly eliminates all of these. On the other hand, however, methods depending on electrical measurements have been criticized for a variety of other reasons, and so far as this particular apparatus is concerned, it has been privately stated by a prominent American technologist that in his opinion (without actual experience of the apparatus) the results cannot be usefully interpreted because of the influence of other indeterminate factors. In particular, although distilled water is stipulated, some water-soluble material must be extracted from any sized paper, sufficient, if it be an electrolyte, to change the pH value of the conductor, and so give an erroneous reading on the milliammeter, and hence a false sizing value. That is to say, the Currier value is alleged to be compounded of both the water resistance and the acidity of the sample under test. Similar criticisms were in fact leveled at the apparatus when it was demonstrated before this Northern Division some 15 months ago. On theoretical grounds it would appear that this criticism is basically sound, and we have critically examined the apparatus with this objection prominently before us. The results of our investigations in this direction are given in detail below; and at this stage it is only

* Paper read at Junior meeting of the Northern Division of the Technical Section of the Paper-Makers' Association of Great Britain and Ireland.

necessary to state that we have found no evidence whatever that the objections can be sustained in practice.

Correlation With Dry Indicator Method

We have approached the examination of the Currier instrument in the belief that if good correlation could be shown to exist between the Currier and the Dry Indicator methods, over a range of papers of different types, thicknesses and sizing degree, then the apparatus would be justified.

In addition to the graphs supplied by the manufacturers (Table I and Graph 1), to illustrate this point, we have ourselves carried out a series of comparisons over a reasonably wide range (so far as our own paper-making interests are concerned) of papers, a selection of which is given below (Table II and Graph 2).

TABLE I

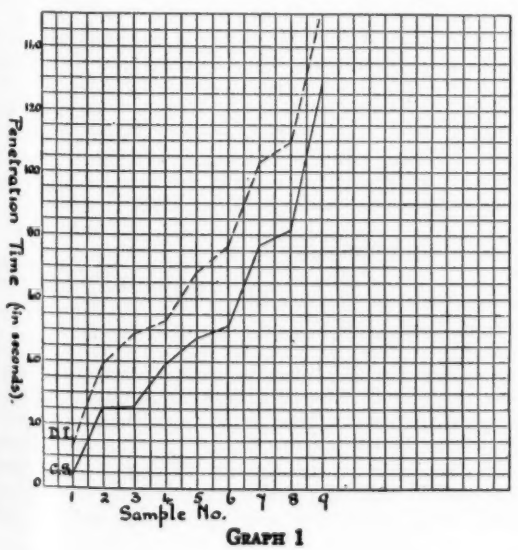
Type	Substance, lb. D.C., 480	Size test, Sec. Currier	Size test, Sec. D.I.	Ratio D.I./C.S.T.
1. Rag manifold	14	4.6	12.5	2.7
2. Tub-sized offset	30	25.2	39.0	1.5
3. Tub-sized bond	24.7	25.5	48.9	1.9
4. Kraft envelope	36.6	39.0	52.7	1.4
5. Drinking-cup stock	36.6	47.2	67.8	1.4
6. White bond	37.3	51.8	76.3	1.5
7. White bond	43.3	76.7	103.2	1.4
8. Red-white duplex	53.3	82.0	109.6	1.3
9. Tag stock	66.6	128.1	153.7	1.2
10. Invitation Bristol	125.2	293.0	398.0	1.4

TABLE II

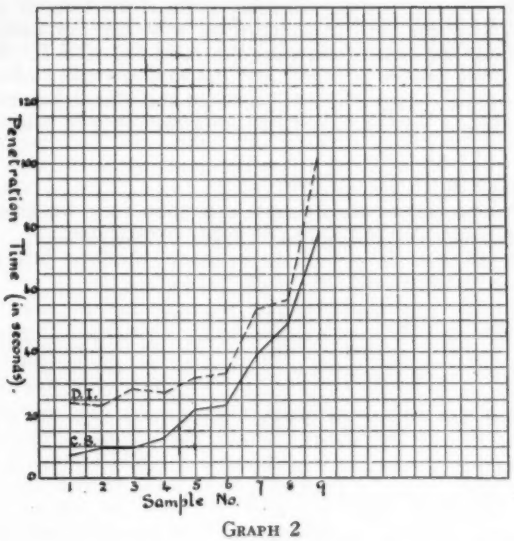
Type	Substance, lb. D.C., 480	Size test, Sec. Currier	Size test, Sec. D.I.	Ratio D.I./C.S.T.
1. Glazed imitation parchment	18	6.7	24	3.58
2. Gld. kraft	22	9.5	23	2.42
3. Gld. casing	18	9.8	28	2.86
4. Gld. unbl. sulphite	22	12.5	27	2.16
5. Ungld. kraft	22	21.9	32	1.46
6. Ungld. kraft	30	23	33	1.40
7. M.G. kraft	23	39.1	54	1.38
8. Ungld. bl. sulphite	31	49	57	1.17
9. M.G. kraft	40	77.9	102	1.31

The Currier apparatus invariably gives lower sizing values than the dry indicator method. We attribute this to two causes: (1) that the slight pressure in the Currier test enables "skin" resistance (see below) to be more easily overcome, and (2) that the presence of penetrated moisture is detected more quickly; in point of fact, the end-point is reached long before such water becomes visible.

It will be noticed that in our tests, the ratios D.I./C.S.T. are more variable than in the case of those supplied by the manufacturers. We attribute this to the fact that those of our papers which give high ratios are super-calendered



GRAPH 1



GRAPH 2

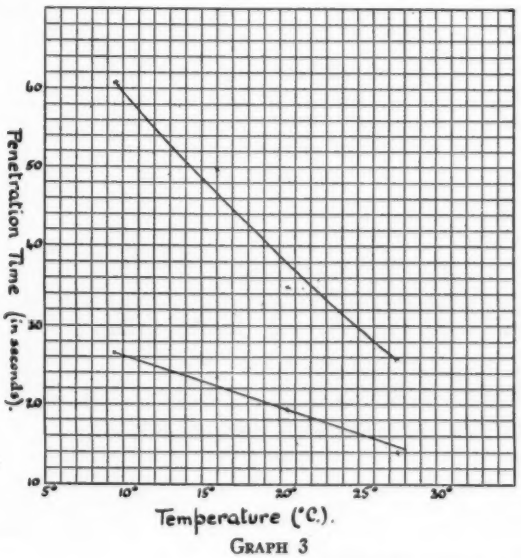
papers. In actual practice there appears to be two stages of penetration which the Currier apparatus, unlike any other, is capable of distinguishing, namely, the penetration of the surface of the paper, or skin, where plastic flow has occurred, and the penetration of the inner structure. Tests carried out on papers before and after supercalendering, show that the time of penetration of the inner structure is almost constant in spite of the difference in thickness[1], and that the time of penetration of the skin (assuming the time elapsing between contact of the water with paper, and the first movement of the milliammeter needle to be a measure of this), is variable.

TABLE III

Paper	1st Movement sec.	End-point sec.	Time of penetration of inner structure, sec.
Unglazed	13	35	22
Glazed	25	48	23

This being so, then the slight pressure on the sample

[1] Indeed, it would appear feasible to expect that a mathematical analysis of this point might lead to a fairly clear conception of the extent to which paper is compressed at different layers by supercalendering; but for reliable data, a much larger number of experiments would be necessary than we have had time for.



GRAPH 3

in the Currier test considerably reduced the time of penetration of the skin in comparison with the dry indicator method, and hence increases the ratio D.I./C.S.T. Bearing these points in mind, and the rare necessity of comparing the sizing values of unglazed and glazed papers, the correlation between the two testing methods is held to be proved.

Variables During Test

In order that satisfactory operation may be ensured, a number of variables have been investigated.

In all the following experiments, neither hot plate nor grid were used.

Expt. A. Volume of Water in Bottle

The manufacturers state that, as the bottle is air-tight except for the felt area at the mouth, no appreciable head or pressure is delivered to the sample, and hence variation in the volume of water have no effect on the result. Since, during any series of tests, this volume is gradually becoming smaller, it was thought advisable to check this statement. For this purpose, tests were carried out with various quantities of water in the bottle, the volume being reduced between each stage, by the repeated use of an absorbent paper, to ensure that no complications due to changes in position of the bottle, and therefore in area of contact, were introduced (Expt. B). The temperature of the water was maintained constant throughout the tests (c.f. Expt. D).

TABLE IV

Vol. of water in bottle, c. c.	Size test, sec. Sample No. 1	No. 2	No. 3	No. 4	No. 5
80 (full)	34	194	36	64	32.5
60	33	194	34	66	32
40	34	172	32	50	29
20	29	182	31	65.5	25.5

It is obvious that for accurate duplication, the volume of the water in the bottle must not be allowed to fall below the two-thirds-full level. Below this, irregular variations are likely to occur; among which the weight due to decreasing volume is only of secondary importance except with very hard-sized papers. That mere weight resting on the sample has some effect is indicated by the slight increase in penetration time (an increase so slight as to be only just beyond the limits of experimental error) when the screw cap (weighing 47 g.) at the base of the bottle is removed. In general, when the volume of water becomes too low, the penetration time is affected by some other obscure factor, which we have been unable to trace.

Expt. B. Area of Contact of Felt and Paper

This is of the utmost importance, as shown by the following results, obtained by altering the position of the bottle to give different areas of contact.

TABLE V

Condition	Size test, sec.
Edge of felt just in contact	61
Approx. ½ felt in contact	33
Approx. ¾ felt in contact	38
Maximum contact	36

Expt. C. Hardness of Water

Tests were carried out using hard water and distilled water having the following characteristics:

	Hard water	Distilled water
pH (electrometric method)	7.42	6.61
Specific conductivity, micromhos	1050	14.5
Hardness (English deg.)	49	2

The size values obtained were as follows:—

TABLE VI

	Size test, sec. Sample No. 1	No. 2
Hard water	21.3	20.8
Distilled water	19.0	18.8

The results show that it is advisable to use distilled water if small errors are to be avoided. It is significant though, that, in view of the most important theoretical objection to the apparatus, referred to previously, water of high conductivity gives, not lower, but higher readings (see also Expt. G).

Expt. D. Temperature of Water

In all kinds of penetration tests, the temperature of the penetrating medium is of paramount importance. Where the medium is water, it must be borne in mind that the viscosity (η) changes from 0.0132 at 9.5 deg. C. to 0.0085 at 27.5 deg. C., a difference of 35.6 per cent. The effect on the Currier test is indicated in the following table, and it seems to vary with papers of different degrees of sizing (see Graph 3).

TABLE VII

Temp. of water Deg. C.	Size test, sec. Sample No. 1	No. 2
9.5	26.6	60.9
16.0	23.5	49.8
20.5	19.2	34.8
27.5	14.0	25.9

These and other similar results indicate the need for careful temperature control except where side-by-side tests are sufficient.

Expt. E. Temperature of Plate

For laboratories where there is a lack of humidity and temperature control, the American manufacturers have incorporated a heating system, whereby the chamber below the metal plate is maintained at a thermostatically-controlled temperature of 40 deg. C. Before conducting any tests, they recommend that the bottle be left in contact with the hot plate for at least two hours, so that temperature equilibrium between the plate and the water in the felt may be attained. In this way, it is contended, variations due to changing humidity conditions are practically eliminated.

Tests on our instrument show that, starting from room temperature, the internal temperature of the heating chamber rises to 39.0 deg. C. in 22 minutes, indicating that the thermo-regulator is accurately set; the surface temperature of the plate (measured by contact with a short, lagged column of mercury) is then 30.0 deg. C., this being increased to 31.0 deg. C. after 120 minutes. A considerably longer period gives no further increase, owing to radiation losses. The temperature of the water in the bottle after contact with the plate for 120 minutes is 24 deg. C.

The rate of heat transfer through the plate to the felt was measured as follows. The chamber was first allowed to attain its maximum temperature (39.7 deg. C.). Two cc. of mercury then placed in contact with the plate acquired a maximum temperature of 31.0 deg. C. in 90 seconds. When samples of paper were interposed between the mercury and the plate, the rate of heat transfer was reduced, as shown in Table VIII.

TABLE VIII

	Substance g. per sq. m.	Caliper mil.	Size test, sec.	Temp. of Hg, Deg. C.	Time, sec.
Sample 1	109	5.9	47	26.5	90
				30.0	—600
Sample 2	60	2.5	24	26.5	40
				30.0	450

From these results, since the water penetration time is considerably lower than the time to attain even semi-equilibrium in temperature, it is clear that, contrary to the American maker's claim, at no time can the temperature of the water in the felt be 40 deg. C., or indeed, higher than 31 deg. C.; and even this only after an excessively long penetration period. Under ordinary con-

ditions, owing to convection currents in the bottle, it is probably lower than this. This means that an unknown and variable temperature gradient exists throughout the water as it penetrates the paper sample, which may be still further complicated by differences in the temperature of the paper *per se*. We have already shown (Expt. D) that the temperature of the water is a very important factor, and we are compelled to conclude that the heating system embodied in the American model is not justified by experimental results; the more so as it adds appreciably to the total cost of the apparatus. It is for both these reasons that the apparatus as manufactured in this country does not incorporate plate temperature control. Variations of humidity are known to affect sizing degree, but it is surely more economical to construct a small cabinet in which humidity is controlled by a bath of sulphuric acid of suitable concentration. In the absence of a proper humidity room, we have employed such a cabinet for over six years with satisfactory results.

EXPT. F. EFFECT OF VARIATIONS IN RELATIVE HUMIDITY

A limited number of tests have been carried out to show the effect of conditioning, at different degrees of relative humidity, on sizing degree as determined by the Currier apparatus.

TABLE IX

	Size test, sec.	
R.H., Per cent	Sample No. 1	No. 2
Circa 20	64.5	32.2
65	60.8	27.4
80	55.0	25.6

Tests carried out after conditioning at 90-100 per cent r.h. in steam show that sizing degree is reduced considerably at this high humidity, but the results were too erratic for enumeration, owing to the saturated condition of the test papers.

EFFECT OF ELECTROLYTES

EXPT. G.—In examination of the suggestion that the apparatus may be measuring the pH value of the paper rather than its sizing degree, in that, theoretically, results must be vitiated by the electrolyte content of the paper, we have carried out a number of tests with different solutions, and the results are incorporated in the following table:

TABLE X

	Size test, sec.	
Penetrating medium	Sample No. 1	No. 2
Distilled water	19.0	18.8
0.1% NaCl	22.0	22.2
1.0% NaCl	20.6	19.9
0.1% $Al_2(SO_4)_3$	18.7	19.8
1.0% $Al_2(SO_4)_3$	19.8	18.5

The specific conductivities and pH values of the solutions and paper used, are as given:

TABLE XI

Penetrating medium	Spec. cond. micromhos	pH (electrometric)
Distilled water	14.5	6.61
0.1% NaCl	1,620	7.61
1.0% NaCl	12,960	5.88
0.1% $Al_2(SO_4)_3$	497	4.02
1.0% $Al_2(SO_4)_3$	2,840	3.51
Paper sample No. 1 (5% aq. ext.)	134	4.37
Paper sample No. 2	125	3.85

It is obvious that, in spite of the high conductivity of the solutions of inorganic salts used, the Currier size values are practically unaffected by employing them as penetrating media. The reason for this is that distilled water is itself an almost perfect conductor to the circuit employed.

To take an actual example: in a normally sized paper of 70 lbs. D.C., the weight of paper with which the water was in contact was 0.08 g., and the amount of water taken up was 0.035 g. Allowing a water-extractable value of 0.5 per cent aluminium sulphate calculated on the weight of paper, the concentration of the electrolyte, even assuming all is dissolved, cannot be greater than 1.1 per cent; such a concentration would be substantially reduced for papers of lower substance and lower acidity. There is ample evidence, therefore, that in the conditions met with in practice, no complications are to be expected from this cause.

We have not lost sight of the possibility of employing the Currier instrument for measuring the resistance of papers to penetration by other polar liquids. A few preliminary experiments have shown that such liquids do act as conductors, but we have no detailed information to put forward at this stage. Non-polar liquids, such as benzene, cannot, of course, be used in the apparatus.

We should like to state that the Currier size tester has been in use in our laboratory for about 1½ years without giving the slightest trouble, having entirely superseded the Dry Indicator method.

In conclusion, we have to thank the directors of Messrs. Cooke & Nuttall, Lt., for the permission to publish this paper, and the Cambridge Instrument Co., Ltd., for supplying a photograph of the modified model made by them.

Packaging, Packing and Shipping

A study of the packaging methods employed by representative American concerns manufacturing consumer and industrial goods is contained in a volume called "Packaging, Packing and Shipping," published September 8 by the American Management Association.

The volume will be perhaps the most complete study of packaging, packing and shipping that has yet appeared. In it are 37 authors writing on 41 phases of the subject. Sixty-four pages of illustrations graphically show packages that have won awards in the American Management Association's annual competition for distinctive merit in packaging.

The contents of the book trace the development of packaging through the Consumer Marketing Division of the American Management Association—a non-profit professional society doing research work in all phases of business management.

The authors of the various chapters in the book are sales, production, advertising and promotion managers; heads of design departments; colorists; typographic counselors; heads of shipping departments, etc. Among the many companies that have representatives in the book are: E. R. Squibb & Sons, General Foods Corporation, Seagram Distillers, Swift & Co., Chevrolet Motor Company, Standard Brands, Westinghouse Electric and Manufacturing Company.

A strikingly smart package in itself, the book's cover was designed by the well known commercial artist, Jim Nash, whose design for the du Pont Five Star Anti-Freeze Container won the Irwin D. Wolf Award in the 1936 packaging competition.

Information regarding this book may be obtained at the offices of the American Management Association, 330 West 42nd Street, New York, N. Y. The price of the volume is $7.50.

R. S. Kellogg to Address Paper Salesmen

The Eastern Division of the Salesmen's Association of the Paper Industry held its regular luncheon and meeting at the Hotel Lexington, New York, on Monday.

A large attendance is anticipated at next Monday's event, when R. S. Kellogg, secretary of the Newsprint Service Bureau, will be the principal speaker.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Paper Specialties

Manufacture of Paper for Toweling. Milton O. Schur assignor to Brown Co. U. S. pat. 2,035,024 (March 24, 1936).—The partially or completely dried web of waterleaf toweling paper is treated with a tanned glue solution, so that the paper (after drying) contains about 3 per cent of tanned glue.—A.P.-C.

Granular Coated Web Such as Abrasive Paper. Raymond C. Benner, Romie L. Melton and Henry P. Kirchner, assignors to The Carborundum Co. U. S. pat. 2,035,521 (March 31, 1936).—In order that most of the particles of the granular coating will be individually oriented and inclined with their longer dimensions at an oblique angle with respect to the surface of the web, the freshly coated web is supported at an oblique angle with the coated side down until the adhesive is set.—A.P.-C.

Process and Apparatus for Producing Variegated Roofing. John Robert assignor to The Barrett Co. U. S. pat. 2,037,822 (April 21, 1936).—Immediately after leaving the coating rolls, and while the asphalt is still soft and tacky, the coated sheet passes under a surfacing apparatus. The latter comprises a hopper of the same length as the width of the sheet and divided into two compartments by a longitudinal partition. A single valve plate controls the discharge of different-colored granular materials from both compartments in such a way as to form on the sheet sets of overlapping wavy lines of different colors.—A.P.-C.

Waterlaid Felt for Roofing Papers. Milton O. Schur and Walter L. Hearn assignors to Brown Co. U. S. pat. 2,033,485 (March 10, 1936).—A felt for making impregnating roofing paper is made from a furnish of unhydrated purified wood pulp (containing at least 90 per cent alpha-cellulose) and unpurified hydrated rag stock.—A.P.-C.

Apparatus for Saturating Absorbent Sheet Material. John Wesley Pearl assignor to The Barrett Co. U. S. pat. 2,040,529 (May 12, 1936).—In impregnating roofing felt by passing over a series of rolls that are alternately immersed in and above a bath of molten asphalt, etc., weaving or side slipping of the sheet is prevented by removing the foam and excess saturant from the surface of the sheet as it passes over the rolls. This is preferably accomplished by the use of hollow perforated rolls.—A.P.-C.

Building Material. Robert G. Quinn assignor to International Paper Co. U. S. pat. 2,035,921 (March 31, 1936).—Bark is mixed with water and passed through a hammer mill reducing it to a pulpy mass, part of which is put through a coarse stone disk mill and the remainder through a fine stone disk mill. The coarse- and fine-ground pulps are mixed in appropriate proportions in a beater or mixer above which is mounted a nozzle through which molten asphalt (preferably containing a suitable wetting agent) is atomized into the stock by means of high pressure steam. The resultant pulp consists essentially of bast fibers emcompassed by a film of outer bark, which in turn is coated with asphalt. The pulp is formed into shingles having a thick butt and tapered sides.—A.P.-C.

Composite Flooring Material. Harold C. Harvey assignor to The Agasote Millboard Co. U. S. pat. 2,035,884 (March 31, 1936).—A substantially thick and rigid base board having a certain degree of resiliency is impregnated on at least one surface with cryctalline sulphur to such a depth as to afford substantial resistance to deformation by pressure without destroying the essential resiliency of the base board, and an impervious covering material (suitably a thin sheet of rubber) is secured to it by a suitable cement.—A.P.-C.

Transparent Tissue and Process of Making Same. Carleton Ellis assignor to Ellis-Foster Co. U. S. pat. 2,029,525 (Feb. 4, 1936).—Tissue paper is impregnated with a urea formaldehyde resin or a mixture of this resin with acetone formaldehyde resin.—A.P.-C.

Imitation Leather and Manufacture Thereof. Roger B. Hill. U. S. pat. 2,037,130 (April 14, 1936).—Absorbent paper is impregnated with a colloidal suspension (suitably rubber latex or compounds thereof), and is frozen to destroy the suspension and effect quick precipitation of the solids. The sheet is then dried as usual.—A.P.-C.

Absorbent Paper Product and Process of Producing the Same. Merrill A. Youtz assignor to Northern Paper Mills. U. S. pat. 2,032,645 (March 3, 1936).—The normal loss of absorbency which unsized absorbent paper toweling undergoes when stored for six months or more is decreased by incorporating in the freshly made toweling from 0.05 to 0.2 per cent of a wetting agent chosen from the group of substance consisting of sulphated and sulphonated oils, sulphonated rosin distillates, alkyl sulphates of higher alcohols, alkylated naphthalene sulphonic acids, and salts of these substances.—A.P.-C.

Method of Making Safety Paper. Burgess W. Smith assignor to The Todd Co., Inc. U. S. pat. 2,032,816 (March 3, 1936).—Warning signals are printed on the paper after tub sizing while the paper is still moist, or by moistening the formed paper before printing. Printing is effected with a colorless chemical or ink capable of giving a color reaction with chemical eradicators, and the paper is then dried and furnished so that the printing becomes invisible.—A.P.-C.

Adhesive Tape. Ferdinand W. Humphner assignor to Mid-Stated Gummed Paper Co. U. S. pat. 2,032,845 (March 3, 1936).—A web of paper is coated on one side with a pressure-sensitive adhesive and on the other with a base metallic coating comprising a powdered metal, casein, clay and wax.—A.P.-C.

Apparatus for Producing Safety Paper. William H. Grogan and Frank C. Ladd assignors to Keith Paper Co. U. S. pat. 2,034,232 (March 17, 1936).—The invention provides a construction whereby one or more lines of planchets (small tissue paper discs) are delivered on to the incompletely formed web on the paper machine wire in such a manner that they are incorporated into the web with the planes of the individual discs lying in the plane of the web.—A.P.-C.

Process of Manufacture of Paper. Harry H. Nelson and Guillaume Becker. U. S. pat. 2,033,351 (March 10, 1936).—There is added to the furnish in the beater a fresh but uniform solution of cellulose sulphocarbonate prepared

so as to have as high a viscosity as possible, and hydrated cellulose is precipitated in soluble form on the fibers by means of an acid solution consisting of a mixture of sulphurous acid and alkali bisulphate in such proportions as to avoid release of hydrogen sulphide and separation of sulphur. The paper formed for this stock is translucent and repellent to water and fats, and possesses considerably increased strength.—A.P.-C.

Moistureproof Paper. Leonard E. Branchen and George R. Clark assignors to Eastman Kodak Co. U. S. pat. 2,036,392 (April 7, 1936).—Paper is impregnated with a (preferably dilute) solution of wax and then coated with a solution comprising nitrocellulose and a rather high proportion of a substantially water-immiscible plasticizer or softener, with or without a resin.—A.P.-C.

Process for the Chemical Stabilization of Paper. Otto J. Schierholtz assignor to Ontario Research Foundation. U. S. pat. 2,033,452 (March 10, 1936).—An alkaline-earth metal bicarbonate is introduced into the paper after the web has been formed and preferably after it is sized. —A.P.-C.

Paper Manufacture. George A. Richter assignor to Brown Co. U. S. pat. 2,033,481 (March 10, 1936).—Paper of high wet strength and high wet absorbency is obtained by introduction into the stock of cellulose ethers, more particularly the hydroxy ethyl ethers.—A.P.-C.

Apparatus for Imparting Stretchability to Webs. William W. Rowe and Warren A. Morris assignors to The Paper Service Co. U. S. pat. 2,034,421 (March 17, 1936). —The purpose of the invention is to provide an apparatus to crepe or crinkle paper longitudinally, so that it will be stretchable transversely of its length. The paper is engaged by a table-like member, plate, belt, cylinder, etc., the surface of which is provided with corrugations or rugosities extending in the direction of travel of the sheet. The paper is depressed into the corrugations or rugosities by means of fluid pressure or mechanical agencies (*e.g.*, suitably arranged belts); and finally the corrugations are crushed or otherwise set.—A.P.-C.

Safety Paper and Process for Making It. Frank S. Wood assignor to Frank W. Wood. U. S. pat. 2,032,385 (March 3, 1936).—A relatively small quantity of fine-fibered pulp is dyed with a water-soluble fugitive dye and mixed in a white writing-paper furnish.—A.P.-C.

Artificial Leather Manufacture. Milton O. Schur assignor to Brown Co. U. S. pat. 2,033,486 (March 10, 1936).—In artificial leather produced by impregnating soft absorbent paper with latex, the non-rubber solids of the latex exert a stiffening effect on the fibrous base. This is prevented by introducing into the paper glycerine or its homologues (such as ethylene glycol) along with the latex.—A.P.-C.

Adhesive Paper and Method of Making the Same. Harold Kushel. U. S. pat. 2,039,808 (May 5, 1936).—Adhesive kraft-paper tape is made by coating one face of kraft paper with a solution of a water-soluble aniline dye containing sizing, calendering, and applying a coating of animal glue over the same surface.—A.P.-C.

Process of Oil-Proofing Material and Product Thereof. Benjamin H. Thurman, Arthur W. Thomas and Morris Mattikow, assignors to Refining, Inc. U. S. pat. 2,039,753 (May 5, 1936).—Paper is rendered oil-proof by applying to a surface thereof a film of a composition consisting essentially of a solution of a water-soluble soap.—A.P.-C.

Cigarette Wrapper. Albert H. Lowe assignor of one-fourth to Carle Whitehead and Albert L. Vogl. U. S. pat. 2,028,552 (Jan. 21, 1936).—Cigarette wrappers are impregnated with a soluble silicate such as sodium silicate and with a nitrate such as sodium or potassium nitrate.—A.P.-C.

Safety Paper and Method of Making Same. Francis L. Simons assignor to George La Monte and Son. U. S. pat. 2,037,937 (April 21, 1936).—A safety paper containing a soluble ferrocyanide is stabilized by means of alkali metal phosphate with or without addition of sodium fluoride.—A.P.-C.

Mulch Fertilizer Paper. Harold E. Wright assignor to Central Paper Co. U. S. pat. 2,038,019 (April 21, 1936): —A moisture retaining, substantially impervious paper is provided on one surface with a coating of a nitrogenous adhesive mixed with soil corrective or fertilizing chemicals.—A.P.-C.

Protective Paper Package. Frank S. Wood. U. S. pat. 2,032,386 (March 3, 1936).—A safety seal for paper packages is formed by applying a relatively wide band of adhesive or glue, and applying over the glue while still wet a narrower band or stripe of paraffin in which is dissolved a small quantity of oil-soluble coloring matter.—A.P.-C.

Corrugated Cardboard. Albert Marcel Arbin. Fr. pat. 624,787.—The board is corrugated so as to crowd the corrugations together, even to the point of bringing adjacent corrugations into contact with each other, in which case an adhesive may be applied along the lines of contact. Greatly increased strength is claimed, as compared to ordinary corrugated boards of the same weight.—A.P.-C.

Fiber Board. James N. Deveruex. Can. pat. 356,555 (March 17, 1936).—A fiber board has a water-resistant skin surface composed of 91.76 per cent fine fibers, 3.34 per cent rosin and 3.90 per cent inorganic matter—A.P.-C.

What Demands are Placed Upon Jacquard Boards? K. Pampel. Papier-Ztg. 61 no. 26: 574 (March 28, 1936).—Jacquards, cut and perforated to suit the jacquard looms in spinning factories, must be air-dry, contain no groundwood pulp and absorb as little moisture as possible; in other words, they should neither shrink nor expand with variations in humidity and temperature, to which they are constantly exposed. The Swiss and Italian factories employ successfully for this purpose simple straw boards, although their strength properties could be improved and their brittleness be reduced. Manufacturers of jacquards could help the consumers by giving them directions on how to store such boards correctly.—C.J.W.

Press-Board and Glazed-Board. H. Postl. Wochbl. Papierfabr. 66, No. 48: 905-07 (Nov. 30, 1935).—Early history of press-boards and glazed-boards, description of various raw materials used in its manufacture, sizing, coloring, and the mechanical treatment such as, screening, forming, pressing, drying, moistening, calendering and friction calendering; are briefly described.—J.F.O.

Board and Carton with Marbling Effect. H. Postl. Wochbl. Papierfabr. 66, No. 52: 975-76 (Dec. 21, 1935). —Short description of methods for giving board and carton a marbled effect.—J.F.O.

Device for Pouring Molds for the Manufacture of Coffins, Trunks and Similar Objects, Made from a Material Consisting of Fibers Suspended in Water with or Without Additional Materials. O. Y. Hedqvist, Vase. Swed. pat. 84,304 (July 9, 1934).—J.F.O.

Process and Device for the Manufacture of Multiple Layer Carton. C. A. Andersson, Lillehammer, Norway. Swed. pat. 84,363 (Dec. 31, 1929).—J.F.O.

Process for the Manufacture of Fiberous Boards (Building). Ljusne Woxna A. Bol. Ljusne. Swed. pat. 84,076 (Jan. 4, 1933).—One side of the board is provided with single or cross veneer.—J.F.O.

Heat Insulation with Air Cells. Zanders Isolerings A. Bol. Stockholm. Swed. pat. 83,999 (Feb. 28, 1931).—

The metal foil is between two layers of corrugated board.—J.F.O.

Process for the Manufacture of Bituminous Roofing and Insulation Board. A/S Jens Villadsens Fabriker, Copenhagen. Nor. pat. 55,366 (May 31, 1933).—A high melting point bitumen is put on the board. The bitumen is mixed with a volatile mineral oil or distillate.—J.F.O.

The Necessity of Scientific Investigation in the Manufacture of Board. E. Oswald Muller. Wochbl. Papierfabr. 66, Special Number: 50-51 (Dec., 1935).—Twelve important problems in the manufacture of board are enumerated and are looking for a better solution. The importantace of Scientific investigation is elaborated on.—J.F.O.

Process for the Manufacture of Building Boards. Ernstrom & Co. A. Bol. Gothenberg. Swed. pat. 83,962 (August 30, 1932).—Cement is added to the fiberous material as well as other non-fibrous materials.—J.F.O.

Heat Insulation Made from Several Sheets of Paper. C. G. Munters, Stockholm, Swed. pat. 84,297 (March 1, 1933).—Air spaces are provided between the sheets of paper.—J.F.O.

Machinery

Study of the Flow of Stock from the Headbox to the Wire. Finnish Paper and Timber J. 17, no. 15:688, 690-692 (Aug. 15, 1935).—The author reviews recent studies by Brecht and Klischewitsch and Rjuchin for determining the dilution of a pulp suspension. Reference is made to a formula suggested by Brecht for calculating the amount of liquid per liter from the difference in concentration of sodium chloride after thorough mixture of with the suspension in the headbox. The Russian investigators replace the sodium chloride with sodium thiosulphate and claim greater reliability for their method.—C.J.W.

Acid-Resistant Linings with Carbon Bricks. F. Hoffmann. Chem. Fabrik 9, no. 7/8: 96-97 (Feb. 19, 1936).—The manufacture, suitability and physical and chemical properties of carbon bricks for digester linings are discussed. The material is inert to chemical attack by the different cooking liquors and does not crack or spall when subjected to sudden changes in temperature. Carbon bricks can be made in larger sizes than ordinary bricks for this purpose and can be specially shaped for wedges and similar applications. Asplit cements which contain a synthetic resin have proved satisfactory for filling the joints.

Testing Apparatus with SKF Bearings. J. Lunke. Papir-J. 24, no. 5: 47-48 (March 20, 1936).—The suitability of SKF bearings for testing instruments is pointed out; they were used for the Brecht-Imset tear-through tester and are applied to a stiffness tester which is being examined at the Norwegian Paper Research Institute.—C.J.W.

Operating Conditions in Centrifugal Screens and Deckers. A. Kruger. Finnish Paper and Timber J. 17, no. 5: 217-218, 220, 222, 224 (March 15, 1936).—Reference is made to a Russian study by W. Saharowa (Bumazhnaya Prom. 14, no. 5:21 (1925)). The author found that variations in the concentration have an unfavorable effect on centrifugal screens; best results in this particular study were obtained with concentrations of 0.6 per cent. The screening surface should be divided into different zones according to their operating efficiency and finer screens used for the less efficient areas to prevent slivers from passing. In the case of deckers, an increase in the concentration from 0.17 to 0.5 per cent doubled the output; the pulp-water level in the vat should be kept constant and the screening surface clean by frequently blowing steam through.—C.J.W.

Operating High-Speed Cutters and the Troubles Encountered. Papier-Ztg. 61, no. 17:340, 342, 344 (German); 346, 348, 350 (English) (Feb. 26, 1936).—A systematic discussion of the defects which may occur in high-speed paper cutters of the guillotine type, and which may be due to either the machine, the knife, the paper or the method of operation.—C.J.W.

Feeding Stock to the Paper Machine. Ernest Poirier. Can. pat. 354,053 (Nov. 12, 1935).—The cross-sectional area of a stream of stock to the paper machine is varied so as to maintain an approximately constant rate of delivery of solid constituents notwithstanding variations in the consistency of the stock.—A.P.-C.

Weight Variation on the Paper Machine. F. W. Hayward. World's Paper Trade Rev. 105:270, 272, 313-314, 356-362, 402, 404, 451-454, 494, 497-498 (Jan. 24, 31, Feb. 7, 1936); Paper Maker 91: TS37-43 (March, 1936).—A discussion of the causes and prevention of weight variation on the paper machine, giving an outline of a few of the better known consistency regulators and a somewhat fuller description of the Foxboro Stabilog consistency controller.—A.P.-C.

Why Correct Consistency for Basic Weight? R. D. Kehoe. Paper Mill 58, No. 34: 36-37 (Aug. 24, 1935). A brief discussion showing the importance of volume control at the stuff box and the advantages of the Poirier weight governor for this purpose.—A.P.-C.

The Characteristics of Power Requirements for Paper Machines. H. W. Rogers. Paper Trade J. 102, No. 15: 41-44 (April 9, 1936).—An analysis of the power requirement of the various parts of the paper machine of various widths and speeds with comments on the influence of certain variables such as suction box, vacuum, water in driers, torque, etc.—A.P.-C.

Sheet Formation on Fourdrinier Wire. M. M. Rubin. Paper Mill 58, No. 46: 15-20 (Nov. 16, 1935).—A general discussion of the various factors which affect sheet formation on the fourdrinier wire.—A.P.-C.

Methods of Control in Felt Usage. E. A. Rees. Paper Mill 58, No. 36: 17-18 (Sept. 7, 1935).—An outline of the proper treatment of paper making felts.—A.P.-C.

New Suction-Press Arrangements. R. C. Heys. World's Paper Trade Rev. 104: 1587-1590, 1630, 1633, 1667-1670, 1710, 1744, 1746, 1784, 1786 (Nov. 15, 22, 29, 1935).—A description is given of a number of new patented designs and arrangements advanced to enable paper manufacturers to derive full benefit from the possibilities of the vacuum-roll and to make more and better paper in the same or less mill space. Most of them are merely new combinations of principles which had been previously individually proven. They are adaptable to vacuum-forming, fourdrinier, cylinder or M. G. machines.—A.P.-C.

The McPherson Vat. P. H. Tigwell. Paper Mill 58, No. 32: 7, 9 (Aug. 10, 1935).—The McPherson vat is designed so as to set up a crosswise current of just the proper speed to lay the fibers on to the face of the cylinder mold in a manner that will prevent all of them from settling to a permanent machine direction position. Its merits are discussed.—A.P.-C.

Method and Apparatus for Removing Bark from Timber by Means of Fluid Jets. Karl J. Karlström assignor to Wikmanshytte Bruke Aktiebolag. U. S. pat. 2,038,658 (April 28, 1936).—The unbarked timber is heated by means of hot water or steam to a suitable temperature below 100° C. and is then quickly cooled by means of water. The timber is then subjected to the

action of one or more powerful fluid jets directed crossways against the timber and caused to move along the length of the same. Preferably, during the action of the jets, the timbers are fed slowly along and at the same time give an intermittent turning movement.—A.P.-C.

Log Debarking Cutter Head. Arthur M. Kirkwood. U. S. pat. 2,034,908 (March 24, 1936).—The knives are formed integral with base portions and the latter are curved and removably interlocked to each other in a wheel around which they form a complete band. The bases are bolted through the rim of the wheel, and hence the strain from the knives are distributed to all the bolts. The cutting edges are inclined at approximately 45° to the axis of the cutter, and the knives are spaced so that the point of one knife contacts with the log shortly before the heel of the preceding knife leaves the log. Gullets are provided between each knife affording clearance for the chips, and means are provided for gauging the depth at which the cutter enters the log.—A.P.-C.

Apparatus for Pressing and Dehyrating Fibrous Materials. Carl F. Brodin. U. S. pat. 2,038,712 (April 28, 1936).—A sheet of pulp or paper is dehydrated by passing through a press in contact with a sheet of sponge rubber at least one side of which is covered with a reinforcing material.—A.P.-C.

Apparatus for Baling Paper Pulp. John E. Ott assignor to Acme Steel Co. U. S. pat. 2,037,039 (April 14, 1936).—The machine is constructed so that one or more flexible metallic binders (*e.g.*, sheet metal straps) can be conveniently passed around the individual bales during baling with the free ends in convenient position for securing them together, and the binders are automatically stretched taut around the individual bales as the latter travel through the apparatus.—A.P.-C.

Method of Baling Pulp. Arthur T. Campbell, assignor to Acme Steel Co. U. S. pat. 2,037,211 (April 14, 1936).—Pulp is compressed into an elongated body travelling through a confining chamber, where it is engaged at intervals by a series of needles forming holes through which flexible binders are threaded. The body of pulp is thus divided into units and at the same time the binders are ready to be tightened around the units and fastened.—A.P.-C.

Apparatus for Baling Paper Pulp. Chester M. MacChesney assignor to Acme Steel Co. U. S. pat. 2,037,249 (April 14, 1937).—Means are provided for compacting and moving an elongated mass of pulp in combination with a hollow needle by means of which flexible binders are placed in position, around the units of the pulp in the succeeding operations of forming the completed bale. —A.P.-C.

Dandy Roll. Peter S. Sinclair and Kennet C. Gosling assignors to The Sinclair Co. U. S. pat. 2,039,610 (May 5, 1936).—The supporting helical structure of the roll is formed by winding a flat, substantially rectangular strip on edge. A series of longitudinal rods extend across and are secured to the outer edges of the successive helices. The outer edges of the latter have notches provided therein midway between the longitudinal rods, and two sets of reinforcing rods are secured in the notches and at an angle to the axis of the roll—A..P-C.

Doctor or Smoothing Blade for Treating Coated Sheets. Russell L. Jenkins and Thomas S. Foley assignor to Swann Research Inc. U. S. pat. 2,033,379 (March 10, 1936).—The doctor blade is provided with a curved or cylindrical surface terminating in a straight sharp edge.—A.P.-C.

Paper Making Machinery. James K. Darby assignor to Beloit Iron Works. U. S. pat. 2,039,780 (May 5, 1936). —The invention provides a construction of fourdrinier machine tables that permits of applying the fourdrinier wire loop over all or any desired part of the wet end of the machine by stringing the wire laterally on the machine, applying the loop over the machine by relative movement and sustaining the weight of the machine from outside the wire loop and along the bottom run of the loop in the application of the wire, and more specifically sustaining the weight of the machine through the bottom run of the wire and upon transverse rails beneath the bottom run of the wire. The rails which sustain the weight of the table or other laterally removable part and which guide this part are disposed outside the wire loop and below the bottom run of the wire where they may be permanently disposed and need not be removed and replaced in stringing a wire.—A.P.-C.

Head-Box Construction. Ernest A. Leloff assignor to the Northwest Paper Co. U. S. pat. 2,034,402 (March 17, 1936).—A double-tapered block (preferably of wood) is secured within the head-box and across its width, directly on the adjustable gate, and in effect converts a vertical slice into a Voith slice.—A.P.-C.

Paper Making Machine. Daniel C. Bert. U. S. pat. 2,038,708 (April 28, 1936).—A number of pressure rolls are located around a suction drum in compact fashion so that the felts may be much shorter than heretofore. The rolls are mounted so as to exert a progressively increasing pressure in the direction of the drum and act with progressively decreasing resiliency upon the drum. —A.P.-C.

Paper Machine Suction Box. William P. Evans. U. S. pat. 2,039,308 (May 5, 1936).—The wire as it passes over the suction box is supported on an endless ribbed rubber belt having series of laterally spaced holes. The top of the suction box is solid and has series of holes that register with those in the rubber belt.—A.P.-C.

Paper Makers' Felt. John P. Koester. U. S. pat. 2,041,137 (May 19, 1936).—The invention provides a special weave of press felts that provides relatively large openings to allow of easy drainage of water and at the same time prevents relatively slipping of the warp and filling strands on each other.—A.P.-C.

Felt Conditioning Machine. Charles H. Manton. U. S. pat. 2,033,990 (March 17, 1936).—The machine includes a rotating distributing valve for distributing hot water at high pressure through numerous nozzles spaced at equal distances apart and at a uniform distance from the moving felt. A housing is provided for the numerous feed pipes extending from the valve to the nozzles. The ports in the disc valve are arranged so that one part is always open while another is opening and another closing, thus eliminating the use of a threaded shaft and of a reversing mechanism. The tensioning means for the valve proper and the water pressure in the valve casing combine to hold the valve against its seat.—A.P.-C.

Cylinder Paper Machine. Herman L. Kutter assignor to The Black-Clawson Co. U. S. pat. 2,037,243 (April 14, 1936).—To prevent alignment of the fibers and produce effective fiber interlacing in the forming web a series of movable blades is provided in the initial forming zone, and they are given a vigorous movement in a direction substantially transverse to the direction of screen movement.—A.P.-C.

Apparatus for Treating Paper Stock. Charles P. Tolman assignor to Noble and Wood Machine Co. Can. pat. 355,072 (Dec. 31, 1935).—A stream of paper making stock is subjected to shearing action under pressure while it is passed in a liquid film through a film shearing gap. Pressure is applied in advance of the shearing gap, and the freeness of the sheared stock tested. The value of

freeness of the stock is adjusted by increasing or decreasing the feed pressure.—A.P.-C.

Automatic Brake for Unwinding Paper Rolls. Etienne Saignier and Gaut-Blancan & Cie. Fr. pat. 792,613.—A brake-shoe (suitably of felt, etc.) is mounted on a pivotally suspended curved lever, at the free end of which is a small-diameter roll around which the paper passes to remove the curvature due to the first winding. The level is urged the roll by means of an adjustable spring.—A.P.-C.

Multiple Motor Drive for Paper Machines. Brown Boveri & Co. Fr. pat. 792,595.—In a sectional motor drive for paper machines, two generators (preferably of equal power) are used to feed the motors. During normal operation of the machine, the two generators are connected in parallel; but in starting or inching the driers, only one generator is connected.—A.P.-C.

Screen for Paper Pulp. Edward J. Trimbey. Can. pat. 354,060 (Nov. 12, 1935).—A rotary movement is imparted to the pulp within a cylindrical screen chamber so that the fibers move parallel to the screen surface and pass through centrifugally.—A.P.-C.

Increasing Field for Centrifugal Pulp Screens. E. J. Trimbey. Paper Industry 18: 115 (May, 1936).—A brief indication of some of the more recent applications of centrifugal screens.—A.P.-C.

Paper Making Machines. William P. McCorkindale and American Writing Paper Co., Inc. Brit. pat. 439,012 (Nov. 27, 1935).—In making paper, pulp sheets formed by suction successively on a mold are transferred to separate, successive carriers which are subjected to heat to dry the sheets.—A.P.-C.

Notes on the Structure and Formation of Paper. G. Cesconi. Papier 39: 39-45, 123-126, 219-223 (Jan., Feb., March, 1936).—A general discussion of the factors affecting the density of paper, of the formation of the sheet on the wire, and of the influence of the shake and pitch of the fourdrinier wire.—A.P.-C.

Shell Bodies for Rubber Roll Covering. W. E. Brown. Paper Industry 18: 27-28 (April, 1936).—A discussion of the proper construction of the metal body on which is vulcanized a rubber covering, indicating the more important factors involved.—A.P.-C.

Flow Box Design. J. B. Gouch. Pulp Paper Mag. Can. 37: 259-262 (April, 1936).—Suggestions for obtaining uniform velocity with minimum eddies and slime.—A.P.-C.

Electrical Stackers Increased Production of Board Machines. Francis A. Westbrook. Paper Industry 18: 35 (April, 1936).—The advantages of electrical stackers for handling heavy boards are pointed out.—A.P.-C.

Comparative Head Losses in Various Kinds of Pipe When Unbeaten Pulp of Certain Kinds and Consistencies are Being Pumped. H. E. Fritz and S. B. Jones. Paper Trade J. 102, No. 17: 38-39 (April 23, 1936).—A series of tests carried out at the Piedmont, W. Va., mill of the West Virginia Pulp and Paper Co. are reported in graphical form, but no conclusions are drawn.—A.P.-C.

Wood Stave Tanks and Blow Pits. A. N. Ball. Pulp Paper Mag. Can. 37: 314-320 (May, 1936).—A description of their construction and discussion of their advantages.—A.P.-C.

Drive for Paper Machines. William H. Millspaugh. Brit. pat. 437,031 (Oct. 23, 1935).—In a paper machine drier, in which heated cylinders are driven by a pair of endless ropes passing around the ends of the drums, or sheaves, etc., attached thereto, the ropes have adjacent flat surfaces level with the drum surface and receive between them the leading edge of the paper and guide it about the drum.—A.P.-C.

The Rewinding of Paper. Paul Vidal. Papeterie 58: 146-153 194-201, 242-249 (Feb. 25, March 10, April 10, 1936).—A general discussion of the theory of different types of rewinders.—A.P.-C.

Calender Roll Crowning. E. H. Berges. Paper Industry 18: 112-113 (May, 1936).—A brief discussion.—A.P.-C.

The Width of the Slots in a Knotter. Wochbl. Papierfabr. 67, No. 4: 65 (Jan. 25, 1936).—Discussion concerning the job that the knotter should perform and it is brought out that in order to operate efficiently, a knotter should be used only to remove the knots and not to screen the stock—J.F.O.

Information Concerning Steam Traps. Karl Guthnecht. Wochbl. Papierfabr. 67, No. 5: 88 (Feb. 1, 1936).—Troubles occurring with the different types of steam traps and means of eliminating same, particularly those used on paper machines.—J.F.O.

Contribution to the Cleaning of Felts in the Paper Industry. Frotz Ohl. Wochbl. Papierfabr. 67, No. 8: 149-52 (Feb. 22, 1936).—The author treats the subject both from a practical and scientific viewpoint; giving a list of the various materials used in washing felts and by means of tests show the efficiency of each chemical as well as the harmful effect on the felt itself.—J.F.O.

The Question of Drives for Calenders, Cutters and Winders, as Seen from the Standpoint of the Plant Engineer. Rudolf Mehlo. Wochbl. Papierfabr. 67, No. 13: 239-42; No. 14: 256-58 (March 28, April 4, 1936).—Normally the drive for calenders is built for only two speeds, and the speed during operation is regulated by a friction coupling. Much smoother and positive is the individual electric motor, and this applies also to the cutters and winders. The choice of electric drives is discussed fully and many illustrations accompany the article.—J.F.O.

Experiences with Chlor-Caoutchouc Coating. Schultze. Wochbl. Papierfabr. 66, No. 48: 907-08 (Nov. 30, 1935).—Chlor-caoutchouc coatings are used as a protection for metals, they are water-proof, inert toward almost all inorganic chemicals and many organic chemicals, electrical insulation and resistant to fungus and bacteria. The following points should be noted in the application of chlor-caouchouc coatings; the base should be carefully prepared, the correct base should be used, applied in the correct manner, dried properly and be easily accessible to all places requiring the coating.—J.F.O.

Can the Paper Machine be Improved? Wochbl. Papierfabr. 66, No. 50: 938-39; No. 3: 47 (Dec. 14, 1935; Jan. 18, 1936).—Comments on a previous article of the same title. Increase in wire life, suction couch and suction presses and moisture content of paper entering the dryers are discussed.—J.F.O.

Doctors for Stonite Press Rolls. Seigfried Voigt, Kothen. Wochbl. Papierfabr. 67, No. 15: 277 (April 11, 1936).—Doctor blades wear out much quicker with Stonite rolls than with the other type of rolls. The Vickery doctor 111 BB has held up the best for Stonite rolls.—J.F.O.

From Transmission to Electric Paper Machines. F. Schiller. Wochbl. Papierfabr. 67, Special Number: 57-62 (Dec., 1935).—Evolution of the electric drive for paper machines, including illustrations and discussions on the latest systems.—J.F.O.

Concerning Types of Digestors. A. P. Petrow, Zellstoff U. Papier 15, No. 12: 514 (Dec., 1935).—A spherical digestor and an upright digestor with forced circulation are compared. The pertinent data concerning the cooking are given and in conclusion the author states that the disadvantages of the forced circulations, viz., increased liquor and steam consumption, longer cooking, down time

for cleaning beating tubes, outweigh the advantages.—J.F.O.

Device for Mixing Chests for Paper Stock Suspended in Water. A. Bol. Kamyr, Karlstad, Sweden. Finn. pat. 16,699 (June 4, 1934).—J.F.O.

Screen Plate. K. M. Strand, Sigdal. Nor. pat. 55,481 (Sept. 4, 1934).—The plate is made of a thin metal sheet, at most 4 millimeters thick, with ribs on the bottom for strengthening the screen.—J.F.O.

Device for Stationary Pulp Digestors with Inner Liquor Circulation Lines and Outside Pump. E. Morterud, Oslo, Nor. pat. 55,523 (March 13, 1934).—J.F.O.

Seamless Container with Fastener, Made from Formed Fiberous Mixture. Pappenguss Gesellschaft fur Zellstoffabrikate m.b.H. Berlin. Nor. pat. 55,413 (Feb. 15, 1930).—J.F.O.

Device for Screw Presses. A/S Kampens Mekaniska Vaerksted, Oslo. Nor. pat. 54,844 (April 9, 1932).—J.F.O.

Process and Device for the Cleaning of Wood Chips from Saw Dust and Other Small Impurities. Sven Rahmberg, Wallvik. Finn. pat. 16,490 (Dec. 16, 1933).—The material is stirred and shaken while air is blown into the mass.—J.F.O.

Apparatus for the Removal of Air Bubbles (foam) and Similar Materials from Solutions Containing Air. T. C. Bieth, Hedemore. Swed. pat. 84,052 (Jan. 15, 1934).—J.F.O.

Rotating Screen Drum for the De-watering of Suspended Material. O. Qviller Oslo. Swed. pat. 83,668 (July 6, 1933).—J.F.O.

Doctor for Register Rolls. I. Wallquist, Dals Langed. Swed. pat. 83,528 (Oct. 12, 1932).—Patent concerns the position of the doctor blade.—J.F.O.

Device for the Removal of Dust or Loosely Adhering Powder Formed Particles from One or Both Sides of Sheet, Strip or Plate Formed Materials. G. Smith & C. Smith, London. Swed. pat. 83,116 (Oct. 14, 1933).—A brush or suction device extends over the entire width of the material.—J.F.O.

Process for the Formation and Maintenance of a Layer of Gas Bubbles Over the Surface of a Liquid for Attaining Intimate Mixture Between Gas and Liquid for the Purpose of Heat Interchange, Washing and Evaporating. Industrikemiska A. Bol., Stockholm, Swed. pat. 83,189 (April 22, 1929).—J.F.O.

Device for Barking Drums. E. Ormell & F. Berggren, Kramfors. Swed. pat. 83,215 (Feb. 20, 1933).—A door is specially placed to allow only a partial opening in the drum.—J.F.O.

Machine for the Manufacture of Tubes from Fiberous Materials and Hydraulic Cement. Societa Anonima Stabilimente di Dalmine, Milano, Italy. Swed. pat. 83,798 (Dec. 23, 1931).—J.F.O.

Device for the Conveyance of a Web of Paper or Pulp or Similar Material, Which is Hanging Together, in a Zig Zag Motion Through a Drying Chamber. A. Bol. Svenska Flaktfabriken Stockholm. Swed. pat. 83,800 (March 26, 1931).—J.F.O.

Machine for Putting a Pad on the Edge of Crepe paper and similar materials O. Jonsson & A. Kirkegaard Nielsen. Finn. pat. 16,599 (Feb. 10, 1934).—J.F.O.

Screen Drum for Screening Wood Chips. A. Bol. Svenska Maskinverken, Sodertalje. Swed pat. 83,855 (July 14, 1934).—J.F.O.

Membrane Screen. Firma J. M. Voith, Heidenheim. Swed. pat. 83,893 (May 7, 1934).—Device for individual control of the oscilations of each membrane.—J.F.O.

Fourdrinier Section for Paper, Carton and Similar Machines. Firma J. M. Voith, St. Polten. Aust. pat. 142,122 (Feb. 15, 1935).—Method for shaking the fourdrinier section at certain desired places.—J.F.O.

Process and Apparatus for Manufacturing Objects from Fiberous Material. Baumgartner Katz & Co. Spandau. Finn. pat. 16,553 (Oct. 10, 1933).—Means of removing the greater part of the water from the form.—J.F.O.

One-Sided Stock Inlet for Cylinders Which Are Not Submerged in the Stock Solution, for Cylinder Machines, Board Machines and Similar Apparatus. Willy Fuchs, Bad Warmbrunn. Ger. pat. 617,427 (March 30, 1934).—J.F.O.

Fourdrinier Section of a Paper and Similar Machines. Firma J. M. Voith, Heidenheim. Ger. pat. 617,807 (Aug. 8, 1933).—Method of shaking certain parts of the fourdrinier section.—J.F.O.

Regulating Device for Multiple Motor Drive with Direct Current. Allgemeine Elektricitats Gessellschaft, Berlin. Ger. pat. 612,690 (March 9, 1928).—The invention is characterized by the resistance of the supplementary field regulator being automatically changeable during operation in relation to the speed.—J.F.O.

Device for Maintaining the Relative Parallel Operation of the Individual Motors in Multiple Motor Work Machines, Especially Paper Machines. Siemens Schuckertwerke Aktiengesellschaft, Berlin. Ger. pat. 613,045 (Aug. 1, 1930.)—J.F.O.

Multiple Motor Drive for Crepe Paper Machines. Allgemeine Elektricitats Gesellschaft, Berlin. Ger. pat, 615 018 (Nov. 16, 1930).—For each of the two individual groups of motors, a guide motor is provided in front of and behind the creping apparatus for the regulation of the uniform operation.—J.F.O.

Drive for the Winders. Herbert Martiny. Ger. pat. 617,808 (April 4, 1933).—J.F.O.

Device for Impregnating in Certain Places on Endless Paper Webs, as for Example Cigarette Paper Bobbins. F. Lerner, Vienna. Aust. pat. 141,509 (Dec. 15, 1934).—J.F.O.

Process and Device for the Screening, Cleaning and Distintegrating of Plant Fiber Waste, Especially for the Preparation of Old Paper. Paul Lindner and Hugo Rumpe, Berlin. Ger. pat. 617,684 (Nov. 6, 1931).—The material travels on two or more endless wire belts with at least 200 up to 5000 and more meshes per square centimeter, and the material is then subjected to a stream of water of at least 4 atmospheres pressure. The dirt and short fibers pass through the wire and the acceptable fiber remains.—J.F.O.

Shake Device. Firma J. M. Voith, Heidenheim. Ger. pat. 617,806 (May 23, 1933).—J.F.O.

Carrier for the Wet Section and the Dryer Section of a De-Watering Machine for Paper Stock. Thomas J. Heimbach, G.m.b.H. Co., Duren. Ger. pat. 617,326 (Aug. 25, 1932).—It has been found out that carriers for the wet and dryer sections of a paper machine can be made entirely or in part, with textile or metal threads, of porous rubber.—J.F.O.

Power House

Stack Gas Analysis and Control. Samt. Wochbl. Papierfabr. 67, No. 13: 242-43 (March 28, 1936).—The author shows the importance of stack gas analysis and methods for its control. The Sieger formula for heat loss through the stack is given as

$$V = C \frac{T - t}{K}$$ where T is the

temperature of the stack gas, t the temperature of the air entering the fire box, K the percentage of carbon dioxide

and C a variable factor which for hard coal with a heat value of 7000 German units is 0.69 to 0.70. V is the loss in per cent.—J.F.O.

Power and Heat Economics During the Year 1935. K. Weiss. Zellstoff U. Papier 16, No. 2: 58-61; No. 3: 97-101. (Feb., March, 1936).—Discussion of the new designs in boilers, improvements for individual parts and auxiliaries.—J.F.O.

The Protective "Power Ring." R. A. Dodillet. Zellstoff U. Papier 16, No. 3 102-103 (March, 1936).—The author disagrees on the merits of the protective "power ring" which was described in a previous article of same title by Ernst Preger.—J.F.O.

Increasing the Power Transmission with Flat Belts by Means of the "Power Ring." Ernst Preger. Wochbl. Papierfabr. 66, No. 47: 888-890 (Nov. 23, 1935).—Believing the transmission of power by means of belts is finding more and wider use; the author then describes means for increasing the efficiency of belt drives, in particular the so-called "power ring." Applications of the "power ring" in various drives in pulp and paper mills are described and illustrated.—J.F.O.

Suitable Use of Leather Belts. Wochbl. Papier-Fabr. 66, No. 49: 924-25 (Dec. 7, 1935).—A general discussion of means for increasing the life and efficiency of belts—J.F.O.

The Spiral Heat Exchanger in the Pulp and Paper Industry. E. Steinmann. Wochbl. Papierfabr., 67, No. 4: 63-65 (Jan. 25, 1936).—By means of illustrations and drawings, the spiral heat exchanger is described; and applications of its use in several different industries are given, including the pulp and paper. The most important thing about the spiral heat exchanger is the fact that due to the high speed flow, there is no deposition of substances on the heating surfaces.—J.F.O.

Pin Principle in the Heat Transfer and its Application to Economizers, Air-Preheaters and Heat Exchangers of all Kinds. C. Kirchholtes. Svensk Pappers-Tidn. 39, no. 7: 120-121 (April 15, 1936).—The author discusses the problem of heat transfer with reference to the pin principle in heating surfaces. The advantage of the system is that an increased heat transfer can be brought about by improved gas turbulence and reduction of the laminar boundary layer without enlarging the heating surface.—C.J.W.

Desludging Devices in Steam Boilers. H. Richter. Ind. Carta 2, no. 12: 586-590; 3, no. 1: 17-22 (Dec., 1935; Jan. 1936).—Emphasis is placed on the fact that special modern and quick closing valves are required for desludging steam boilers at least once every two hours for about two or three seconds. Ordinary old fashioned valves are not suited for this purpose.—C.J.W.

How Power Factor Improvement Reduces Power Cost. R. C. Allen. Paper Industry 17: 956-959 (March, 1936).—A brief discussion of the savings which can be effected by improving the power factor.—A.P.-C.

Mechanical Design of Electrical Machinery. C. J. Koch. Paper Trade J. 102, No. 8: 124-130 (Feb. 20, 1936).—A discussion of certain features of mechanical design which are common only to rotating electrical apparatus, such as induction and synchronous motors, generators, direct current motors, etc.—A.P.-C.

Heat and Power Production and Transmission. F. P. Wilmer. Paper Trade J. 102, No. 12: 44-48 (March 19, 1935).—A progress report outlining developments during 1935 in the generation and distribution of steam and in the production of steam power—A.P.-C.

Electric Generation of Steam in Paper Mills. C. R. Reid. Pulp Paper Mag. Can. 37: 137-139 (Feb., 1936). —A discussion of the quality of electrically-generated steam, and of the ease of operation and continuity of operation of electric steam boilers.—A.P.-C.

Application of Diesel Engines to the Paper Industry. T. A. Burdick. Paper Trade J. 102 No. 10: 34-37 (March 5, 1936).—An outline of the field of application of Diesel engines in the paper industry, together with a discussion of the characteristics of the engines, and a brief mention of installation details and costs—A.P.-C.

A Simplified Conductivity Meter. H. M. Schmitt. Paper Industry 18: 34 (April, 1936).—A brief description of an instrument suitable for automatically controlling solution concentration (*e.g.*, for controlling washing operations or detecting leakage from one system to another), by means of either electrically operated or air operated valves.—A.P.-C.

Test Your Own Boilers. Chester Reed Earle. Paper Industry 18: 26-27 (April, 1936).—A brief outline of a simple procedure for the determination of boiler efficiency by the heat balance method—A.P.-C.

Proper Feed-Water and Boiler-Water Conditioning for High Pressure Boilers. E. W. Butzler. Paper Trade J. 102, No. 16: 38-43 (April 16, 1936).—A discussion of the difficulties due to water created by the present-day trend towards higher boiler pressures and of the methods of overcoming them.—A.P.-C.

The Hardness of Water. Maurice Déribéré. Papeterie 58: 98, 101 (Feb. 10, 1936).—A brief explanation and discussion of the interconversion of French, German and English degrees of hardness.—A.P.-C.

Process for the Removal of Algae Growth from Water Pipe Lines. G. Malmros, Stockholm. Swed. pat. 83,740 (Nov. 9, 1933).—After the water is out of the line, air is blown through which carries increasing amounts of sand.—J.F.O.

Corrosion of Metallic Parts in the Operation of Water Works. G. Wiegand. Wochbl. Papier Fabr. 67, No. 1: 7-9 (Jan. 4, 1936).—Causes of corrosion and means of overcoming same.—J.F.O.

Insulation Specifications for the Paper Industry. J. W. Hemphill. Paper Trade J. 102, No. 8: 106-116 (Feb. 20, 1936).—Standard specifications are proposed for insulation for various applications in pulp and paper mills. The proposed specifications have been tested out in the field over a period of years and have proved their effectiveness.—A.P.-C.

Miscellaneous

Cellulose Research Carried Out in the Lab. D of the Norwegian Institute of Technology During 1935. S. Schmidt-Nielsen. Papir -J. 24, no. 7: 65-68; no. 8: 77-80 (March 15, April 30, 1936).—A review of studies concerning the cuprammonium viscosity of pulps, lignin determinations and multiple stage bleaching and chlorine consumption.—C.J.W.

German Foreign Trade in Pulpwood, Pulps, Board, Paper and Paper Wares. Walther Schmidt, Dessau. Wochbl. Papierfabr. 66, Special Number: 6-13 (Dec., 1935).—To-day, old papers constitute about 20 per cent of the raw material for paper. Sweden supplies Germany more pulp than other country. Germany exports considerably more pulp and paper products than she imports, and while the total trade has diminished continually from 1929 to 1934, the percentage excess has remained about the same in value. Numerous graphs and tables accompany the article.—J.F.O.

Reviewing and Looking Forward. Wochbl. Papier fabr. 66, No. 52: 969-73 (Dec. 28, 1935).—A recapitulation of the important factors affecting the business end of the German pulp and paper industry and a prognostication of the near future.—J.F.O.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING OCTOBER 31, 1936

CIGARETTE PAPER

De Mauduit Paper Corp., *American Trader,* London, 175 cs.; De Mauduit Paper Corp., *Ile de France,* Havre, 3 cs.; Champagne Paper Corp., *Ile de France,* Havre, 478 cs.; R. J. Reynolds Tobacco Co., *Manhattan,* Havre, 140 cs.

WALL PAPER

Rohner Gehrig & Co., *Gripsholm,* Gothenburg, 14 bxs.

PAPER HANGINGS

W. H. S. Lloyd & Co., *Georgic,* London, 4 bls.

NEWSPRINT

International Paper Co., *G. T. D.,* Gatineau, 310 rolls; International Paper Co., *International, I,* Cornwall, 318 rolls; Perkins Goodwin & Co., *City of Hamburg,* Hamburg, 287 rolls; Jay Madden Corp., *City of Hamburg,* Hamburg, 352 rolls.

PRINTING PAPER

National Paper & Type Co., *Westernland,* Antwerp, 5 bls.; J. H. & G. B. Siebold, Inc., *Manhattan,* Hamburg, 35 cs.

WRAPPING PAPER

Blauvelt Wiley Paper Manfg. Co., *Gripsholm,* Gothenburg, 151 rolls, 4 bls.; Guaranty Trust Co., *Gripsholm,* Gothenburg, 812 rolls; ———, *Gripsholm,* Gothenburg, 669 rolls, 153 bls.

KRAFT PAPER

Parsons & Whittemore, Inc., *Gripsholm,* Gothenburg, 1,338 pkgs.

FILTER PAPER

H. Reeve Angel & Co. Inc., *Georgic,* London, 5 cs.; E. H. Sargent & Co., *Gripsholm,* Gothenburg, 2 cs.

SURFACE COATED PAPER

Gevaert Co. of America, *Westernland,* Antwerp, 108 cs.

PHOTO PAPER

J. J. Gavin, *Aquitania,* Southampton, 2 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Samaria,* Liverpool, 5 cs.

TISSUE PAPER

B. F. Drakenfeld & Co., *Samaria,* Liverpool, 3 cs.

GREASEPROOF PAPER

Parsons & Whittemore, Inc., *Gripsholm,* Gothenburg, 500 rolls.

INSULATING PAPER

Okonite Callender & Cable Co. Inc., *American Trader,* London, 6 cs.

PAPER SPOOLS

J. J. Bernitz, *City of Hamburg,* Hamburg, 5 cs.

MISCELLANEOUS PAPER

———, *Gripsholm,* Gothenburg, 956 rolls; The Borregaard Co. Inc., *Gripsholm,* Gothenburg, 321 rolls, 83 cs.; F. L. Kramer & Co., *Gripsholm,* Gothenburg, 20 rolls; Wilkinson Grey & Co., *Gripsholm,* Gothenburg, 13 cs.; Japan Paper Co., *Dagfred,* Kobe, 34 cs.

RAGS, BAGGINGS, ETC.

Royal Manfg. Co., *Sonnavind,* Kobe, 50 bls. cotton waste; S. Shapiro & Son, *Sonnavind,* Kobe, 125 bls. cotton waste; Banco Coml. Italiane Trust Co., *Sonnavind,* Kobe, 45 bls. rags; ———, *Sonnavind,* Kobe, 100 bls. cotton waste; New England Waste Co., *Sonnavind,* Kobe, 800 bls. cotton waste; New England Waste Co., *Sonnavind,* Shanghai, 236 bls. cotton waste; Royal Manfg. Co., *Sonnavind,* Shanghai, 400 bls. cotton waste; Manufacturers Trust Co., *Sonnavind,* Shanghai, 100 bls. cotton waste; J. J. Ryan & Son, Inc., *Sonnavind,* Shanghai, 300 bls. cotton waste; ———, *Caledonia,* Glasgow, 54 bls. paper stock; A. W. Fenton, Inc., *American Trader,* London, 184 bls. rags; J. Cohen Son Co. Inc., *American Trader,* London, 29 bls. paper stock; ———, *Westernland,* Antwerp, 121 bls. bagging; E. J. Keller Co. Inc., *Westernland,* ———, 278 bls. bagging, 283 bls. flax waste; ———, *Nako Maru,* Kobe, 50 bls. rags; Brandwein Mazur Co., *Dagfred,* Shanghai, 400 bls. cotton waste; New England Waste Co., *Dagfred,* Shanghai, 685 bls. cotton waste; ———, *Dagfred,* Shanghai, 250 bls. cotton waste; E. J. Keller Co. Inc., *Dagfred,* ———, 80 bls. paper stock; Royal Manfg. Co., *J. Jadot,* Antwerp, 91 bls. cotton waste; Spaulding Fibre Co., *J. Jadot,* Antwerp, 68 bls. rags; National City Bank, *J. Jadot,* Antwerp, 104 bls. rags; ———, *Exochorda,* Alexandria, 122 bls. rags; W. Steck & Co., *Exochorda,* Alexandria, 146 bls. rags, 183 bls. bagging; J. T. Flannery, *Exochorda,* Alexandria, 78 bls. rags; Castle & Overton, Inc., *Exochorda,* Alexandria, 37 bls. rags; E. J. Keller Co. Inc., *Exochorda,* ———, 183 bls. paper stock; Philadelphia National Bank, *Southern Prince,* Buenos Ayres, 78 bls. rags; Amtorg Trading Corp., *Chelyuskinets,* Leningrad, 2,848 bls. rags; Amtorg Trading Corp., *Chelyuskinets,* Leningrad, 439 bls. waste; 434 bls. linen waste.

GLUE STOCK

American Express Co., *Samaria,* Liverpool, 354 bags hide cuttings; ———, *Vulcania,* Trieste, 600 bags hide glue.

OLD ROPE

———, *Cavallo,* Newcastle, 137 coils.

CASEIN

Balfour Guthrie & Co., *Southern Prince,* Buenos Ayres, 167 bags; American British Chemical Supplies, *Coldbrook,* Buenos Ayres, 500 bags.

WOOD PULP

Perkins Goodwin & Co., *Gripsholm,* Gothenburg, 156 bls. sulphite; Gottesman & Co. Inc., *Gripsholm,* Gothenburg, 1,800 bls. sulphate; M. Sone, *Giulia,* Trieste; 1,855 bls. wood pulp; Castle & Overton, Inc., *City of Hamburg,* Hamburg, 1,750 bls. wood pulp, 350 tons; ———, *Manhattan,* Hamburg, 628 bls. wood pulp, 15 tons; M. Sone, *Ida,* Trieste, 1,190 bls. wood pulp; M. Sone, *Hamburg,*

Hamburg, 162 bls. wood pulp; Bulkley Dunton & Co., *Hansa,* ———, 318 bls. wood pulp.

WOOD PULP BOARDS

Jay Madden Corp., *City of Hamburg,* Hamburg, 237 rolls, 50 tons; Absorbo Beer Pad Co., Inc., *City of Hamburg,* Hamburg, 300 bls.; ———, *Spaarndam,* Rotterdam, 302 bdls.; H. Fuchs & Son, *Gripsholm,* Gothenburg, 67 crates, 1cs.

NEWARK IMPORTS

WEEK ENDING OCTOBER 31, 1936

H. G. Craig Co. Inc., *Donnacona I,* Donnacona, 553 rolls newsprint; H. G. Craig Co., Inc., *Donpaco,* Donnacona, 314 rolls newsprint; H. G. Craig Co., Inc., *Newscarrier,* Donnacona, 335 rolls newsprint.

ALBANY IMPORTS

WEEK ENDING OCTOBER 31, 1936

Bulkley Dunton & Co., *Ditmar Koel,* ———, 500 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING OCTOBER 31, 1936

Chase National Bank, *Dagfred,* Kobe, 334 bls. rags; E. J. Keller Co. Inc., *Exochorda,* ———, 107 bls. rags; International Purchasing Co., *Spaarndam,* Rotterdam, 63 coils old rope; Castle & Overton, Inc., *Spaarndam,* Rotterdam, 323 bls. wood pulp; ———, *Spaarndam,* Rotterdam, 20 bls. rags; ———, *Vulcania,* Trieste, 100 bags hide glue; Pagel Horton & Co. Inc., *Greisheim,* Sweden, 2,035 bls. wood pulp; Parsons & Whittemore, Inc., *Capulin,* ———, 1,375 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING OCTOBER 31, 1936

H. Chanin Corp., *Sonnavind,* Kobe, 150 bls. cotton waste; ———, *Sonnavind,* Kobe, 125 bls. rags, 150 bls. cotton waste; Chase National Bank, *Sonnavind,* Kobe, 25 bls. rags; American Cotton Products Co., *Sonnavind,* Shanghai, 150 bls. cotton waste; ———, *Giulia,* Trieste, 1,028 bls. wood pulp; E. J. Keller Co., Inc., *Spaarndam,* ———, 140 bls. rags; E. J. Keller Co. Inc., *Collamer,* ———, 152 bls. rags; M. Sone, *Frakenwald,* Hamburg, 318 bls. wood pulp.

WILMINGTON IMPORTS

WEEK ENDING OCTOBER 31, 1936

Bulkley Dunton & Co., *Bockenheim,* ———, 250 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING OCTOBER 31, 1936

———, *Giulia,* Trieste, 1,000 bls. wood pulp; Castle & Overton, Inc., *City of Hamburg,* Hamburg, 875 bls. wood pulp, 175 tons; Guaranty Trust Co., *City of Hamburg,* Hamburg, 1,500 bls. wood pulp, 254 tons; ———, *Spaarndam,* Rotterdam, 752 bls. wood pulp; Bulkley Dunton & Co., *Bockenheim,* ———, 3,125 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING OCTOBER 31, 1936

Pagel Horton & Co. Inc., *Bockenheim,* Sweden, 2,483 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING OCTOBER 31, 1936

———, *City of Hamburg,* Hamburg, 37 rolls newsprint; De Mauduit Paper Corp., *City of Hamburg,* Havre, 150 cs. cigarette paper; Chase National Bank, *City of Hamburg,* Havre, 24 cs. cigarette paper; R. J. Reynolds Tobacco Co., *City of Hamburg,* Havre, 361 cs. cigarette paper.

NEW ORLEANS IMPORTS

WEEK ENDING OCTOBER 31, 1936

Gottesman & Co., Inc., *Trolleholm,* Finland, 804 bls. wood pulp; Gottesman & Co., Inc., *Trolleholm,* Sweden, 6,000 bls. wood pulp; Gottesman & Co., Inc., *Ditmar Koel,* Sweden, 3,600 bls. wood pulp; Parsons & Whittemore, Inc., Frankenwald, ———, 1,100 bls. wood pulp.

MONTREAL IMPORTS

WEEK ENDING OCTOBER 31, 1936

M. Sone, Ferncliff, *Sundsvall,* 6,600 bls. wood pulp; Gottesman & Co., Inc., *Ferncliff,* Sweden, 2,400 bls. wood pulp.

West Virginia To Increase Wages

[FROM OUR REGULAR CORRESPONDENT]

MECHANICVILLE, N. Y., November 1, 1936 — Announcement is made here by officials of the West Virginia Pulp and Paper Company of a ten per cent increase in wages in recognition of the increasing cost of living and the limitation of the number of hours worked. The advance, announced by Thomas H. Stirling, resident manager, will be placed in effect December 1 with the hourly rates and salaries of all employees benefiting. The increase is made at this time, according to officials, because of the company's recognition of the advancing living costs and the limitation of the number of hours worked by the employees to forty per week.

While full time operations have been observed at local plant since early in February, it has been more fortunate in this respect than other branches of the company, all of which have lost some time during that period. A statement issued reveals that the company hopes to continue running on full time schedule although there is no assurance of this as the number of orders ahead of the machines at this time are not sufficient to assure full time operations at the end of the next two weeks. Notice of the advance was placed on all bulletin boards at the plant this week and employees were notified to confer with foremen and mill council representatives for full information.

Don Nesbitt Leads Navy Day Observance

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, November 2, 1936.—Don Nesbitt, an official of the Cincinnati Cordage and Paper Company, Dayton, has been one of the busiest men in civic affairs here the past week, having been the leader in Navy Day observance last Monday when the United States Marine band appeared here for two public concerts, and a retired Admiral delivered an address from the Courthouse Esplanade, with Mayor Charles J. Brennan and Chamber of Commerce officials taking part in the ceremonies.

Mr. Nesbitt, who is a son of A. T. Nesbitt, president of the Cincinnati Cordage & Paper Company, and who has long been associated in the business in the Dayton Division, is also the head of the Junior Chamber of Commerce of Dayton.

He has had much to do with local affairs, and has just concluded his work in connection with the Y. M. C. A. membership drive, almost 2,000 members having been added to the rolls in a notable campaign. He took prominent part in the reception and open-house conducted at the Dayton Y. M. C. A., the largest of its kind in the country, following the conclusion of the campaign.

He was also a recent WHIO, CBS speaker on public affairs in the studio owned by the *Dayton Daily News.*

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, November 4, 1936.

Sentiment continues optimistic in the local paper market. Demand for the various standard grades of paper is well sustained. Due to the rising costs of raw materials there is much talk of higher prices for some grades of paper in the near future. Sales forces of the leading paper organizations are unusually active.

The newsprint paper market is in a stronger position. Manufacturing operations in the United States, Canada and Newfoundland are proceeding at near capacity to take care of the heavy demand from newspaper publishers. With advertising lineage and circulations steadily rising the outlook for newsprint is promising.

Steadiness prevails in the fine paper market. Demand for book, cover, bond and ledger papers is brisk. Prices are generally holding to schedule. Tissues are moving in heavy volume. The coarse paper market is firm and kraft wrapping paper is in excellent request. Demand for paper board is fairly active.

Mechanical Pulp

The ground wood pulp market continues to display strength. Production in North America and abroad is being maintained in sufficient volume to take care of the current demand, although there are no undue accumulations and the statistical position of the industry is sound. Prices remain unchanged.

Chemical Pulp

Business in the chemical pulp market is holding up well. Demand for both domestic and foreign grades is persistent. All grades continue steady to firm. The spread of the shipping strike is causing some inconvenience to domestic pulp mills which ship by water and in some cases shipments have had to be made by rail.

Old Rope and Bagging

The old rope market is exhibiting a stronger undertone. Paper mill demand for old manila rope is fairly active. Small mixed rope is moving in good volume for the season. Old rope prices are steady. The bagging market is showing signs of improvement. With offerings of roofing bagging limited, prices are firmer.

Rags

Conditions in the domestic rag market are slightly better. Demand for new and old cotton rags is well sustained. Some grades of cotton cuttings are in excellent request, both for home and export account. Roofing grades are moving into consumption in good volume. The foreign rag market is sharing the general improvement.

Waste Paper

The lower grades of paper stock are attracting more attention from the board mills with the result that prices on strictly folded news and No. 1 mixed paper are firmer. The higher grades of waste paper continue steady. Hard and soft white envelope cuttings are moving freely, while book stock is in better request than of late.

Twine

Trading in the local twine market is fairly heavy. Supplies are moving into consumption at a steady pace. Inquiries for future delivery are numerous and the immediate outlook for this industry is bright. Despite the usual keen competition quotations on both hard and soft fiber twines are firm.

Northern New York TAPPI to Meet

The members and friends of the Technical Asosciation of the Pulp and Paper Industry residing in Northern New York will meet at the Woodruff Hotel, Watertown, N. Y., November 14, 1936.

There will be a luncheon at 12 noon following which two papers will be presented. Prof. C. E. Libby of the New York State College of Forestry, Syracuse, N. Y. will discuss the present and proposed activities of the Pulp and Paper School. F. M. Williams of the Williams Apparatus Company, Watertown, N. Y. will talk on "New Apparatus for Technical Control of Pulp and Paper Manufacturing Operations."

There will be a dinner at 7:30 P.M. during which there will be dancing and following which George Sisson, president of the Racquette River Paper Company will talk on "Technical Control as Viewed by the Management."

Anyone wishing to attend will be welcome. Ladies are invited and a bridge tournament has been arranged for their afternoon entertainment. Please notify W. R. Steele, Technical Service Department, Solvay Process Company, Syracuse, N. Y. of your intention to be present.

Data on Controlled Screen Efficiency

"Data on Controlled Vibration and Screen Efficiency" is the title of a new book which has just been released by the Productive Equipment Corporation, 4600 South Kedzie avenue, Chicago, Ill. Complete data on screening and grading in every industry, charts, data and engineering information, as well as a complete description of "Selectro" Vibrating Screens is thoroughly covered in this new catalog.

Coronation Papers

The Clyde Paper Company, Ltd., of Rutherglen, Scotland, has just issued a Special Souvenir Art Brochure, illustrated in colors, of its Coronation Papers, including a special Art Paper—"Edward Art"—which is being manufactured for all types of Coronation printing.

The brochure has been designed and printed by McCorquodale & Co., Ltd., of Glasgow and London.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, November 4, 1936.

BLANC FIXE.—Paper mill demand for blanc fixe is fairly active. Prices are generally holding to formerly quoted levels. The pulp is selling at $42.50 to $45 per ton, in bulk; while the powder is offered at 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is practically unchanged. Demand is moderately active. Contract shipments are moving regularly. Prices are well maintained. Bleaching powder is quoted at $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues firm. Domestic standard ground is quoted at 17 and finely ground at 17½ cents; while French and Argentine standard ground are selling at 17 and finely ground at 17½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. The contract movement is normal. Prices remain unchanged. Solid caustic soda is quoted at $2.55 to $2.60; while the flake and ground are selling at $2.95 to $3 per 100 pounds, in drums, at works.

CHINA CLAY.—The china clay market is displaying strength. Contract shipments are moving freely. Prices are firm. Imported china clay is quoted at $13 to $21 per ton, ship side; while domestic paper making clay is selling at $6.50 to $12 per ton, ship side.

CHLORINE.—The chlorine market is exhibiting a strong undertone. Demand from the mills is brisk. Contract shipments are moving in good volume. Prices are holding to schedule. Chlorine is quoted at $2.15 to $2.25 per 100 pounds, in tank cars, at works.

ROSIN.—The rosin market is firmer. Paper making gum rosin is now quoted at $6.45 and wood rosin at $6.25 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $3.18½ per 100 pounds, in tank cars, at works.

SALT CAKE.—Demand for salt cake is persistent. The contract movement is well up to average. Prices are holding to schedule. Salt cake is quoted at $12 to $13; chrome salt cake at $11 to $12 per ton, at works; imported salt cake at $12 to $13 per ton, ship side.

SODA ASH.—Supplies of soda ash are moving into consumption with regularity. Inquiries are fairly numerous. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH.—The starch market is little changed. Shipments are going forward at a fairly brisk pace. Prices are steadier than of late. Special paper making starch is quoted at $4 per 100 pounds, in bags; and at $4.27 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Business in the sulphate of alumina market is holding up well. Prices are steady to firm. Commercial grades are quoted at $1.35 to $1.60; while iron free is selling at $2 to $2.25 per 100 pounds, in bags, at works.

SULPHUR.—The sulphur market continues steady. Yearly contracts are quoted at $18 per ton, in bulk, on orders of 1,000 tons, or over, and $20 on smaller quantities. On spot and near by car loads the quotation is $21 per ton. All quotations are in car lots, at works.

TALC.—Conditions in the talc market are practically unchanged. Demand from the paper mills is moderately active. Prices are steady. Domestic talc is quoted at $16 to $18 per ton, at eastern mines; while imported talc is selling at $23 to $30 per ton, on dock.

Market Quotations

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.50 @	8.50
No. 2 Sulphite	6.50 @	7.50
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50
Book, B Grade, Cased		
S. & S. C.	5.85 @	6.60
S. & S. C. Litho	6.10 @	6.85
M. F.	5.60 @	6.35
No. 4 Grade		
Coated and Enamel	6.80 @	7.65
Coated Litho	6.80 @	7.65
Tissues—Per Ream—		
White No. 1	.82½ @	—
White No. 1 M. G.	.77½ @	—
White No. 1½	.62½ @	—
White No. 2	.60 @	—
Anti-Tarnish M. G.	.67½ @	—
Colored	.80 @	—
Kraft	.67½ @	—
Manila	.60 @	—
Unbleached Toilet	2.60 @	3.30
Bleached Toilet	3.94 @	5.26
Paper Towels—		
Unbleached	2.10 @	3.35
Bleached	3.30 @	3.70
Manila—		
No. 1 Jute	9.00 @	9.25
No. 2 Jute	7.75 @	8.50
No. 1 Wood	4.00 @	5.25
No. 2 Wood	3.50 @	4.00
Fibre Papers—		
No. 1 Fibre	4.25 @	5.50
No. 2 Fibre	4.00 @	4.75

(Delivered New York)

News, per ton—		
Roll, contract	41.00 @	—
Sheets	46.00 @	—
Kraft—		
No. 1 Northern	4.25 @	4.75
Standard	4.00 @	4.12½
Southern	3.87½ @	—
Glazed	4.37½ @	—
Striped	4.62½ @	—
Boards, per ton—		
News	37.50 @	40.00
Chip	35.00 @	37.50
Sgl. Mla. Ll. Chip	50.00 @	52.50
Jute Lined Chip	50.00 @	52.50
Kraft Liners	65.00 @	67.50
White Pat. Coated	60.00 @	62.50
Binders Boards	67.00 @	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—		
Moist	25.00 @	26.00
Dry	25.00 @	26.00
(Delivered)		
No. 1 Domestic and		
Canadian	28.00 @	29.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—		
Division 1	2.70 @	3.30
Division 2	2.65 @	2.75
Division 3	2.60 @	2.70
Prime Qualities—		
Class 1 All Prime Easy Bleaching	2.20 @	2.25
Other Than Easy Bleaching		
Class 2 Higher than Standard	2.10 @	2.20
Class 3 Standard	2.05 @	2.10
Unbleached Kraft Lower than Standard	2.00 @	2.05

(On Dock, Atlantic Ports)

Kraft Bleached	3.00 @	3.25
Kraft Light & Strong	2.15 @	2.25
Kraft No. 1	1.95 @	2.15
Kraft No. 2	1.85 @	1.90
F. o. b. Pulp Mill		
Kraft Domestic	1.85 @	2.15
(Delivered)		
Soda Bleached	2.60 @	—

* Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	7.75 @	8.00
Silesias No. 1	6.25 @	6.50
New Unbleached	[illegible]	
New Soft Blacks	[illegible]	
Blue Overall	6.75 @	7.00
Fancy	3.00 @	3.25
Washables	2.25 @	2.50
Mixed Khaki Cuttings	3.50 @	3.75
O. D. Khaki Cuttings	4.25 @	4.50

Old Rags

White, No. 1—		
Repacked	3.25 @	3.50
Miscellaneous	2.75 @	3.00
White No. 2—		
Repacked	2.25 @	2.50
Miscellaneous	1.75 @	2.00
Thirds and Blues		
Repacked	2.00 @	2.25
Miscellaneous	1.90 @	2.00
Roofing Rags		
No. 1	Nominal	
No. 2	1.60 @	1.65
No. 3 (bagging)	1.50 @	1.55
No. 4	1.50 @	1.60
No. 5A	1.40 @	1.50

Foreign Rags

New Rags

New Dark Cuttings	2.25 @	2.50
New Mixed Cuttings	2.00 @	2.25
New Light Silesias	5.50 @	5.75
Light Flannelettes	5.50 @	5.75
New White Cuttings	7.00 @	7.50
New Light Oxfords	4.00 @	4.50
New Light Prints	3.00 @	3.25

Old Rags

No. 1 White Linens	7.50 @	8.00
No. 2 White Linens	6.50 @	7.00
No. 3 White Linens	4.50 @	5.00
No. 4 White Linens	2.25 @	2.50
No. 1 White Cotton	4.25 @	4.75
No. 2 White Cotton	3.25 @	3.75
No. 3 White Cotton	2.50 @	2.75
No. 4 White Cotton	1.90 @	2.15
Extra Light Prints	2.00 @	2.25
Ord. Light Prints	1.75 @	1.85
Med. Light Prints	1.55 @	1.65
Dutch Blue Cottons	2.25 @	2.50
French Blue Linens	3.50 @	4.00
German Blue Linens	2.50 @	2.75
German Blue Cottons	2.00 @	2.25
Checks and Blues	2.00 @	2.25
Linsey Garments	2.15 @	2.25
Dark Cottons	1.90 @	2.10
Old Shopperies	1.75 @	2.00
New Shopperies	1.75 @	2.00
French Blues	2.25 @	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	2.10 @	2.15
Domestic	1.75 @	1.85
Wool Tares, light	1.50 @	1.75
Wool Tares, heavy	1.85 @	2.05
Bright Bagging	1.70 @	1.75
Manila Rope		
Foreign	2.75 @	3.00
Domestic	2.75 @	3.00
Jute Strings	2.00 @	2.25
Sisal Strings	2.00 @	2.10
Mixed Strings	.80 @	1.00

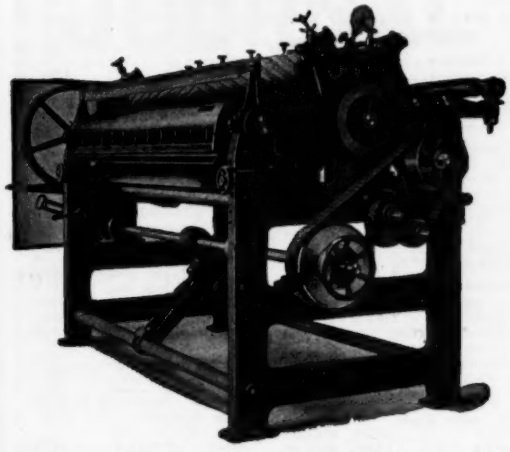
Old Waste Papers

(F. o. b. New York)

Shavings—		
White Envelope Cuttings	2.55 @	2.65
Ordinary Hard White No. 1	2.25 @	2.35
Hard White No. 2	2.10 @	2.20
Soft White No. 1	1.95 @	2.05
Folders—		
Stitchless	.75 @	.80
Over issue Mag.	.75 @	.80
Solid Flat Book	.70 @	.75
Crumpled No. 1	.50 @	.55
Light Stock	.35 @	.35
New B B Chips	.30 @	.35
Manilas—		
New Env. Cut	1.75 @	1.85
New Cuttings	1.35 @	1.45
Old Rope Machine—		
Compressed bales	1.15 @	1.30
News—		
No. 1 White News	1.15 @	1.25
Strictly Overissue	.50 @	.60
Strictly Folded	.50 @	.55
No. 1 Mixed Paper	.40 @	.45

MODEL 28

ROLLER BEARING CUTTER



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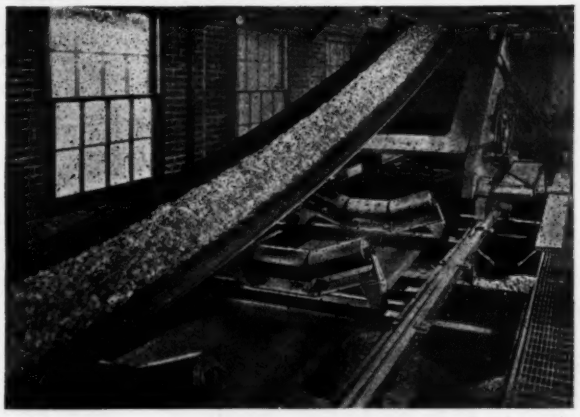

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Offices in Principal Cities

LANGSTON

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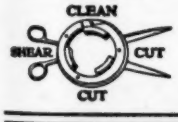

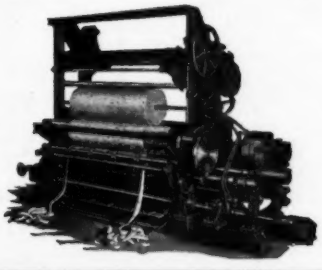

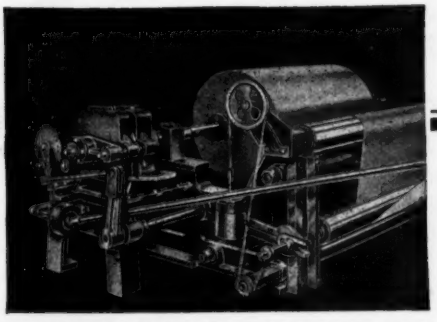

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HIGHEST GRADE CLAYS

COATING FILLING

POWDERED

Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.13¾	@	.16¾
Belg. White Hemp	.14¾	@	.18¾
India Compress	.14¾	@	.14¾
Fine Polished—			
Fine India	.20	@	.22
Unpolished—			
Box	.09¾	@	.10¾
Paper Makers	.09½	@	.11¾
Tube Rope	.10½	@	.13¾
Wall Paper	.11½	@	.12¾
Wrapping	.15	@	.2
Soft Fiber Rope	.12¾	@	.13¾

(Hard Fibre)

Bond	.12	@	.20½
Anchor	.11½	@	.13
Manila	.21	@	.28

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.40
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.07¼
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07½
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¾	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04½	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	42.00	@	—
Sheets, open	47.00	@	—
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.60	@	.70
Solid Books	.50	@	.60
Blanks	1.00	@	1.05
Kraits	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1 Folded News	.42½	@	.45
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

Rag Content Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M. F.	5.00	@	—
Book, S. S. & C.	5.25	@	—
Book, Coated	6.15	@	—
Coated Lithograph	6.15	@	—
No. 1 Jute Manila	10.50	@	—
Manila Sul., No. 1	6.75	@	—
Manila No. 2	4.25	@	—
No. 1 Kraft	6.00	@	—
Southern Kraft	5.00	@	—
News Print Rolls	40.00	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.08	@	.08½
New White, No. 2	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.07	@	.07½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.02	@	.02½
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	2.00	@	2.25
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02¼
New Canvas	.04	@	.04½
New Black Mixed	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	2.25
Repacked	2.50	@	2.75
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	1.50	@	1.60
Domestic No. 2	1.40	@	1.50
Roofing bagging	1.10	@	1.20

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	2.75	@	—
Sisal Rope	2.25	@	2.35
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.25	@	2.50
No. 2	1.00	@	1.10
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.20
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.40	@	1.45
No. 1 Mixed	—	@	.85
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.15	@	1.20
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.65	@	.70
Manila Cuttings	1.80	@	1.90
Print Manila	.55	@	.60
Container Manila	.55	@	.60
Kraft Paper	1.10	@	1.20
No. 1 Mixed Paper	.45	@	.50
Straw Board Chip	.40	@	—
Binders Board Chip	.40	@	—
Corrugated Board	.60	@	.65
Overissue News	.60	@	—
Old Newspapers	.45	@	—

BOSTON

Paper

Rag Content Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.50	8.50
No. 2 Sulphite	6.50	7.50
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¼	@	—
No. 2 Kraft	.04¼	@	—

(Delivered New England points)

Southern Kraft	.04	@	—
News Print Rolls	39.50	@	—
Straw Board, rolls	.009	@	35.00
Filled News Board	42.50	@	45.00
Chip Board	40.00	@	42.50
Single Manila Lined Chip	50.00	@	55.00
Single White, Patent Coated News Board (Bender)	60.00	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.20	@	2.35
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.60	@	.70
No. 1 Books, light	.50	@	.60
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.50	@	1.60
Manila Env. Cuttings, extra quality	1.75	@	1.85
Old Newspapers	.47½	@	.50
No. 1 Old Manila	.60	@	.65
White Blank News	1.10	@	1.15
No. 1 Kraft	1.20	@	—
Mixed Papers	.35	@	—
Print Manila	.55	@	.60
Container Manilas	.27½	@	—
Old Newspapers	.45	@	.47½
Overissue News	.50	@	—
Box Board Chips	—	@	.25
Corrugated Boxes	.47½	@	.50
Kraft corrugated boxes	.95	@	1.00
Screening Wrappers	.40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.50	@	2.80
Domestic	2.75	@	—
Transmission Rope	1.25	@	1.35
Jute Rope	2.12½	@	2.25
Jute Carpet Threads	1.65	@	1.75
Gunny No. 1—			
Foreign	1.90	@	2.00
Domestic	1.75	@	1.80
Bleachery Burlap	4.25	@	4.50
Scrap Burlap—			
Foreign	1.90	@	2.00
Domestic	1.75	@	1.80
Scrap Sisal	2.00	@	2.10
Scrap Sisal for Shredding	2.10	@	2.35
Wool Tares, heavy	1.90	@	2.00
New Burlap Cuttings	2.25	@	2.50
Australian Wool Pouches	2.50	@	2.60
Heavy Baling Bagging	2.00	@	2.50
Paper Mill Bagging	1.65	@	1.70
Bagging No. 2	1.10	@	1.25

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.03½	@	.03¾
New White No. 1	.07½	@	.08
New White No. 2	.04½	@	.05
Silesias No. 1	.06½	@	.06¾
New Black Silesias	.03½	@	.04¼
Soft Unbleached	.08	@	.08½
Blue Chevoit	.06½	@	.07
Fancy	.03	@	.03¼
Washable	.02	@	.0250
Cottons According to grades—			
Blue Overalls	6.25	@	6.75
New Black, soft	—	@	—
Khaki Cuttings	.03¾	@	.04
O. D. Khaki	.03¼	@	.04¼
Corduroy	.02¾	@	.03
New Canvas	—	@	.03
B.V.D. Cuttings	.07¾	@	.08

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.75	@	1.80
No. 2	1.65	@	1.70
No. 3	1.30	@	1.35

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.85	@	2.00
New White Shirt Cuttings	6.50	@	6.75
Dutch Blues	2.25	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	2.05	@	2.25
Old Linsey Garments	2.00	@	2.37½
New Silesias	5.75	@	6.00

TORONTO

Paper

Bond—Delivered—			
No. 5 White	.10¾	@	—
No. 6 White	.10	@	—
No. 5 Tints	.11¾	@	—
No. 6 Tints	.10½	@	—
No. 5 Golden Rod	.12¾	@	—
No. 6 Golden Rod	.12	@	—
Ledgers—			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F.	6.50	@	6.75
No. 2 M. F.	6.25	@	6.50
No. 3 M. F.	5.00	@	5.35
No. 1 S. C.	7.00	@	7.50
No. 2 S. C.	6.50	@	7.00
No. 3 S. C.	5.50	@	6.00
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	3.50	@	—
"B" Manila	4.80	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft, No. 2	5.40	@	—

(F. o. b. Cars Toronto)

News, per ton—			
Rolls (contract)	Nominal		
Sheets	Nominal		

Pulp

Ground wood	27.00	@	—
Unbleached Sulphite	42.00	@	—
Book (Class 1)	58.00	@	—
Writing (Class 2)	59.00	@	—
Select (Class 3)	60.00	@	—

Old Waste Paper

(In carload lots. f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.80	@	.90
Light and Crumpled Book Stock	.70	@	.80
Ledgers and Writings	.90	@	1.00
Manilas—			
New Manila Cut	1.25	@	1.40
Printed Manilas	.50	@	—
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.55	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.07¾	@	.08
Fancy Shirt Cuttings	.02¾	@	.03

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SAVE ON FELTS

Every ounce you are able to reduce the pressure in your dryers the better off you are. And the one practical way to do that is to deliver your sheet to the dryer with less moisture in it.

All of which is the same as saying that you should adopt the felt that will do the best job of extracting ahead of the dryer—adopt certain numbers from the Orr line particularly suited to your requirements.

The line is complete and felting specialists are quickly available.

THE ORR FELT AND BLANKET COMPANY

Piqua, Ohio

ORR FELTS

HIGH NOON on a southern pier. The S. S. York of the Merchants & Miners Transportation Company is due to dock from Baltimore at 6 P.M. Waiting longshoremen are wondering if it will bring them work.

In the office of the M&M General Agent, a teletypewriter begins to click off the York's cargo list, exactly as it is being typed at Baltimore. . . . At 6 o'clock, when the gang-planks go down, the right number of men and the right kind and number of freight cars are ready. The York unloads and sails again on schedule.

M&M first tried Bell System teletypewriter service (typing-by-wire) at two ports in 1934. It proved valuable so quickly that machines were shortly installed at seven other offices.

A large volume of fast, accurate typewritten communications regularly sweeps back and forth between the various offices. Orders. Reports. Estimates. Passenger reservations. Many kinds of administrative matters. Questions are asked and answered on the same connection. Identical records of every word exchanged definitely fix responsibility.

★ "Typing-by-wire" has provided this modern, organized communication service at a substantial saving over former costs, according to M&M's own survey. Bell System representatives will be glad to review your business with you, and perhaps develop comparable economies. No charge. No obligation. Call your local telephone company.